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ABSTRACT

Presented is an informal report of a 3-year early intervention project for young handicapped children in Michigan, a part of the Handicapped Children's Early Education Program, sometimes referred to as the First Chance Projects. Sections cover the following topics, an overview of the project; identification and screening; the service delivery process; parent involvement; supportive services; evaluation; staff development activities; dissemination and training; replication and continuation; record-keeping; disciplinary roles (occupational therapist, physical therapist, speech and language pathologist, psychologist, special educator, and child development specialist); administrative issues; and a description of the early intervention developmental profile. (IM)

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Early Intervention Project

FOR HANDICAPPED INFANTS AND YOUNG CHILDREN

Final Report
1973-1976

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edited by Martha S. Moersch and Ted Y. Wilson

Institute for the Study of Mental Retardation and Related Disabilities • The University of Michigan • Ann Arbor

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INTRODUCTION

The "First Chance" network of the Handicapped Children's Early Education Program, Bureau of Education for the Handicapped (BEH), United States Office of Education, provides support for innovative demonstration programs for young children which can be replicated by school systems and other community agencies. Many states have approved legislation for programming for handicapped children from the day of their birth.

Each "First Chance" project is required to disseminate information gained through implementation of its innovative program. During its lifetime, the project described in this report was involved in all aspects of dissemination, from observation to formal publication. The project was funded at a time when interest in and need for programming information for handicapped infants and young children was high.

The interests and needs of large numbers of persons, representing many disciplines and many levels of involvement, who have contacted the project for information are reflected in the format of this final report. The report is an informal description of the project and was written by the staff members who developed and carried out the project. The report seeks to answer the questions most often asked by visitors and correspondents.

A more formal publication from the project will be available early in 1977 when *Developmental Programming for Infants and Young Children* is published by the University of Michigan Press.

PROJECT OVERVIEW

Martha S. Moersch

In 1971, the Michigan legislature enacted Public Law 198, the Michigan mandatory special education law, with implementation to begin with the 1973-74 school year. This law required that the schools supply an educational program for all persons from birth through age twenty-five who required special educational programming. It was also the responsibility of the schools to insure that special education pupils were provided with the means for taking advantage of the educational program. This provision dictated that the schools assume a more comprehensive management program than the traditional educational curriculum.

By the time the law was passed, many individuals and agencies had become interested in the education of infants, infant stimulation programs, or in developmental assessment and treatment of handicapped infants. A body of literature was being developed, and pilot programs were being carried out.

Staff members of the Institute for the Study of Mental Retardation and Related Disabilities (ISMRRD) of the University of Michigan had explored possibilities for early intervention programs for handicapped infants, and a proposal was submitted in January 1973 to the Handicapped Children's Early Education Program, Bureau of Education for the Handicapped. The proposal outlined an innovative program to be carried out as a model of one of the ways in which the requirements of the mandatory special education law could be met for handicapped children from birth through the age of four. At the same time the proposal was submitted, an internally funded pilot program was started at the Institute on a once-a-week basis.

Notification of funding as a "First Chance" project was received on October 1, 1973, and the Early Intervention Project for Handicapped Infants and Young Children (EIP) began operation at once. It was customary for the first year of "First Chance" projects to be used as a planning year, but the nine months of planning and preparation by the pilot project enabled full operation to begin immediately upon receiving funding.

The major features of the model program were that parents were to be maintained as primary treatment providers for their handicapped children and that an occupational therapist, a physical therapist, and a speech and language pathologist would be primary staff members with a psychologist and a special educator serving as secondary staff members. Justification for the specific staffing pattern was that children recognized as requiring special programming at such an early age would not have academic needs but would require assistance in acquiring cognitive, gross and fine motor, language, social, and self-help skills. While training in teaching these skills to such young handicapped children had not been widespread, it was felt that taken together the three primary disciplines of occupational therapy, physical therapy, and speech and language pathology did encompass the necessary background.

A small population of children had been identified through the Institute's diagnostic and evaluation service and had been enrolled in the pilot program. Upon notification of project funding, contacts were made with area health departments, hospitals, clinics, physicians, voluntary health organizations, day care centers, nursery schools, and with the public through newspapers, brochures, and personal contact. Interestingly enough, except for four children with Down's syndrome who ranged in age from eleven weeks to fourteen months, the children who entered the project at the beginning were usually both chronologically and functionally at the three-and-four-year levels of development and had only mildly handicapping conditions. As the project continued, the children who enrolled were progressively younger and more severely handicapped.

Referrals were accepted from parents as well as professionals, and the fact that the parents recognized that they had a handicapped child who needed some type of special help was sufficient to qualify the child for initial acceptance into the program.

The project accepted children from birth through the age of four, with any type of handicap, who resided within a three county area. There was no cost to the family except that the family provided transportation. Each child, with one or both parents, attended one two-to-three hour group session each week and received a home visit once a week, or once every two weeks. A comprehensive evaluation of the child was performed, and a management plan was developed. In addition to the five disciplines represented on the project staff, other evaluations were performed as needed by Institute staff members. Those disciplines most often called upon were pediatrics, audiology, nutrition, and social work.

In addition to the long-range management plan, a set of short-term objectives was developed for each child and activities for meeting these objectives were carried out both in the group and home sessions.

A maximum number of thirty children at one time were served by the project. Three separate groups were maintained according to the developmental levels of the children: infant, intermediate, and preschool. During the second year of the project, it was determined that the preschool children, those both chronologically and developmentally at the three and four year levels, would be more appropriately placed in public school programs or in normal nursery school programs. During the third year, the project focused on infants and children who were functioning below the level of three years.

Physical Facilities for Group Sessions

The physical facilities included a large carpeted room, an adjoining room with a tile floor, an adjacent bathroom, and a simple kitchen area. There was a lounge area nearby where the parents could visit and have coffee and relief time away from the children. One-way observations windows and/or remote television viewing allowed parents, staff members, students, and visitors to observe group activities.

Many activities took place on the floor and equipment requirements were simple, i.e. tables, chairs (regular and high chairs), wheel toys, mats, bolsters, mirrors, and other toys suitable for young children. Rocking chairs, both for adults and children, were added soon after the project began. Group activities ranged from one-to-one treatment sessions to typical nursery school schedules depending upon the needs of the current population; snack time was always a part of each group session.

One or two normal children were usually included as models in all preschool groups and at times in other groups. These were either children of staff members recruited for specific purposes or siblings of the project children. For a short time, a volunteer was assigned to lead a play group of siblings.

Home Visits

Home visits were scheduled once a week or once every two weeks according to the needs of the child and family. Some visits were made when all family members could be present, and others were scheduled when only the child and mother were present in order to focus on specific needs. Home visits lasted from one to three hours. A primary home visitor was assigned according to the major need of the child or parent, with changes being made as required. A staff member of another discipline sometimes replaced or accompanied the primary home visitor for specific purposes.

Programming

While the general program plan included group and home sessions for each child, there was flexibility in meeting the needs of the specific child. Two children never attended group sessions; one child had a medical condition which required that he not be exposed to other children; another was a post-rubella child who continued to excrete rubella virus. Some children received home visits only, usually for health reasons, and group sessions were added later; other children attended other programs five days each week but continued to receive home visits by project staff members. Health conditions of the children often required that visits be replaced by project staff visits to the hospital.

Attention was always given to determining the most appropriate program for each child. This ranged from assisting the parents in locating a more appropriate program soon after the initial referral to the project, to "graduating" a child when it was decided that he should associate with normal children or move into another program, to assisting a family in securing residential placement for their child.

Since the project operated on a twelve-month basis, some children who regularly attended other programs during the school terms were accepted by the project during the summer months.

The basis for developing individual programs for each child was the *Early Intervention Developmental Profile*.

Advisory Committee

An advisory committee to the project was appointed when funding approval was received. Members included individuals in educational, health, and administrative positions, and parents. Each member was chosen for the unique knowledge and skills he or she possessed, which provided valuable assistance to the project, ranging from direct clinical and training assistance to providing public information. One member served as a one-day-a-week consultant to the project during its second year; another returned to graduate school and was on an academic placement with the project during its third year of operation. Others served as referral sources for the project.

The setting of the project within the Institute provided ready access to a wide variety of knowledgeable and experienced individuals who were able to fill many of the roles of an advisory committee. For this reason, the resources of the advisory committee were utilized on an individual basis more often than as a group.

Project parents provided much of the assistance usually expected of advisory committees, ranging from feedback on project operations to assistance with dissemination activities.

Services to University Students

"First Chance" projects did not include the training of preservice students as a priority. Since the Institute, as a University Affiliated Facility, had this as its top priority, arrangements were made for University students to train with the project. During its three years of operation, the project offered practicum placements and early intervention seminars for University of Michigan students. The percentage of the project director's time supported by a Maternal and Child Health grant allowed this. Students represented the disciplines of early childhood education, special education, speech and language, physical therapy, psychology, nutrition, nursing, audiology, and social work. There is no occupational therapy department at the University of Michigan, but occupational therapy students on field placement at the Institute from other universities did receive training through EIP.

Since there are few opportunities for academic study of handicapped infants in the United States, EIP filled a unique need. The emphasis on interdisciplinary team functioning provided new experiences for many of the students.

In addition to the University of Michigan, EIP staff members served as guest lecturers at Eastern Michigan University, Washtenaw Community College, Wayne State University, Marygrove College, Mercy College, Ohio State University, and University of Queensland, Brisbane, Australia. Students and faculty from various Canadian colleges and universities attended dissemination sessions of the project.

Major Strengths and Weaknesses

Two outstanding strengths of the project were the two major objectives outlined in the original proposal: supporting parents as the primary treatment providers for

their handicapped children and demonstrating an alternative staffing pattern which differed from the usual preschool staffing pattern. Primary staff members were from the disciplines of occupational therapy, physical therapy, and speech and language pathology, and supportive personnel included psychology and special education. It is hoped that no program for handicapped infants will be implemented without major involvement of parents; however, of equal importance is that such programs consider the disciplines of occupational therapy, physical therapy, and speech and language pathology as primary staff.

A third major strength, closely associated with the first two strengths, was the cooperation, mutual support, and creative skill of the staff members who made the project possible, the "team" which is mentioned so often in the report. In working with very young and handicapped children such as the project served, it must be recognized that there are few experts. Each program must build its own team through mutual respect for the knowledge of others and through recognition of the creative problem-solving which is necessary. Staff members were equally creative in disseminating project information to others.

In addition to the immediate staff members in the project, the larger group of Institute staff members, having a wide variety of knowledge and skills, made many valuable contributions to the strengths of the project.

One factor which was recognized as a major weakness of the project, both by persons inside and outside the project, was that it appealed to and was suitable for those parents having the interest, time, and financial ability to become as personally involved in the program as did the parents in the EIP. It is recommended that this weakness, or problem area, be recognized and that efforts be made to ameliorate the weakness rather than adopting the reverse situation of not involving parents because of the difficulties of doing so. Program developers should assume that parents are interested and should include them in problem-solving sessions to discuss how they can be involved.

Lack of transportation was recognized as a weakness which other programs are urged to remediate if possible.

Closure of BEH Funding Period

It was noted in the original proposal that by the end of the BEH funding period, the public schools would have completed three years under the mandatory special education law and could be expected to provide adequate programming for infants and young children. One of the original three counties included in the geographic area covered by the project proved to be too far away to be feasible for children to attend the project sessions. The other two counties adopted the project model within their intermediate school districts and will serve as demonstration sites for an Outreach Project, also funded by BEH. Some of the project children have been mainstreamed into normal settings where they might be expected to remain indefinitely or until their academic requirements make it necessary that they return to special education settings.

IDENTIFICATION AND SCREENING

Eleanor W. Lynch

Unlike the Michigan Mandatory Special Education Act (Public Act 198), the Early Intervention Project had no "child find" component. Although the project was advertised in brochures, newspapers, and in presentations to community organizations, there was no mandate to screen large numbers of children in order to identify children who needed services. During the project's three years, however, staff members did provide consultation to local and intermediate school districts on community screening and "child find" activities to assist districts in meeting the mandatory special education law in Michigan and in anticipation of Public Act 94-142 which mandates identification and screening. These consultations included familiarization of school staff with various screening instruments, suggestions for plans of operation when initiating a community-wide screening program, and linkage with other districts which had already initiated major "child find" projects.

When school systems were assisted in carrying out "child find" activities, three major areas were stressed, including: (1) responsibility for case-finding under the mandatory special education act, (2) strategies for developing adequate case-finding capabilities, and (3) screening procedures.

Responsibility for Case-Finding

Even though Michigan Public Act 198, which requires that the public schools serve all children from birth through age twenty-five regardless of type and extent of handicap, was passed in December of 1971 and implemented in September of 1973, many districts have had difficulty in locating persons who are not receiving services. In fact, fewer children are receiving services under Public Act 198 than prior to the passage of the mandatory education act. This can be accounted for in part because of lowering the upper limit of the intelligence quotient requirement. Also, a smaller number of handicapped preschool children appeared than was projected. In many areas, the preschool children who needed special education have not been identified.

Case-Finding Strategies

Adequate case-finding requires a systematic, thoughtful strategy, knowledge of community agencies, and community trust. When asked to help districts develop strategies for case-finding, the project suggested that they first develop a plan which included a campaign time-line, inside contacts with agencies, publicity ideas or "gimmicks," and a systematic effort to build community trust.

The project suggested that the school system develop a time-line so that all major activities such as radio or television appearances and public service spot reminders, mobile unit visits, area-wide mailings, and on-going presentations at meetings, such as churches and service organizations, could be carefully and strategically timed. The project also suggested that major agencies serving the community, such as social services, public health, child and family guidance clinics, industries, businesses, and local professional groups, be informed about the mandatory special education act and be made aware of available services. Because school boards often have members who are involved in other agencies or professions, they can serve as inside contacts to give visibility to the law, the services, and the school system's efforts.

Another major strategy suggested to school systems was that whenever families came for screening activities, they should be rewarded by having something tangible to take home: an activity book, a monthly newspaper for preschoolers, etc. Many times, "gimmicky" things work. A newspaper ad which says "FREE", generally gets people's attention; it may be helpful to demonstrate on television what the screening involves in order to lessen anxiety, or it may be helpful to link school screening with other agency screening systems that already exist such as the Early Periodic Screening, Diagnosis, and Treatment Program carried out by Medicaid.

Very difficult to develop, yet most important, is the community's trust in the school system's screening, referral, and treatment programs. In order to develop trust the program must deliver services, must maintain openness and encourage visitation, and must actively involve as many consumers as possible.

Screening Procedures

After a case-finding plan has been developed, it is important to determine the most accurate, yet economical, screening procedure. School districts were advised to consider what would be most effective in terms of location, timing, allocation of staff resources, record-keeping, referral, and age levels for screening. Some districts found it most helpful to conduct screening procedures at neighborhood schools along with kindergarten round-up or another annual, publicized event; others found that a traveling van which could move from shopping center to shopping center was most effective; still others found that screening at community centers or health agencies was most productive in finding the children.

When looking at timing, districts had to determine how many case-finding efforts would be made each year and when these efforts would be carried out. In terms of the allocation of staff resources, it was project practice to recommend a team which had expertise in motor development, language development, cognitive development, and family dynamics. A team of these specialists had the combined skills necessary to identify the needs of the whole child and his family system.

During and after the screening process, a systematic record keeping system and a referral system are needed. Community trust requires that records be confidential and not go astray, and yet that they assist others in maintaining

the system and making appropriate referrals. This, in itself, was a job that required the attention of a number of people and in most cases the direct, full-time contribution of at least one clerical person.

Another factor which was important was the age level at which screening would take place. Some districts wanted to screen all two-year-olds first, others all four-year-olds first. In any event, the project urged that the screening system should be developed to provide a "net" which would catch children systematically as well as allow for referrals as problems were noticed.

A decision about what screening instruments to use was another major factor in developing a good case-finding program. The qualities of a good screening device include: speedy and easy administration, predictability, and a wide range of applicability. To be effective, screening instruments had to be predictable yet easily and quickly administered without extensive training. This precluded many of the standard psychological instruments and suggested some of the less refined instruments which could provide the necessary results for decision-making. The project suggested that, at a minimum, screening procedures should investigate vision, hearing, motor, language, cognitive, social, and self-care development. Although many instruments have established national normative data, it was often helpful to develop community norms in order to investigate how well children in a specific community were performing.

Commonly used screening instruments included: the Denver Developmental Screening Test, the Washington Guide for Promoting Development in the Young Child, the Slosson Intelligence Test, and the Caldwell Preschool Inventory. The project urged that as other screening instruments are developed, those involved in preschool case-finding keep abreast of the most recent literature. As children were identified, it would be the screening team's responsibility to refer them for further evaluations and to maintain accurate records on the children.

STRUCTURE OF THE SERVICE DELIVERY PROCESS

Diane B. D'Eugenio

Over the first year of the Early Intervention Project, a process and structure for delivery of service emerged. As the project entered its second year, the staff felt the necessity of clearly defining the steps in that process to insure a system for complete service delivery to current and prospective client-patients. Along with this, a definition of the process would allow uniform gathering of information on each child which could be used to continuously evaluate the children's developmental progress and the appropriateness of their individual program, and would provide a system of data collection for research purposes.

This section will describe the components of the process and structure of the Early Intervention Project's service delivery system from the time a child entered the project to the time he exited.

There were eight major components in the structure of the project which are depicted on the flow chart in Figure 1. These components were: referral, initial home visit, team evaluation, parent informing, individual programming, treatment delivery, re-assessment, and exit.

Entry

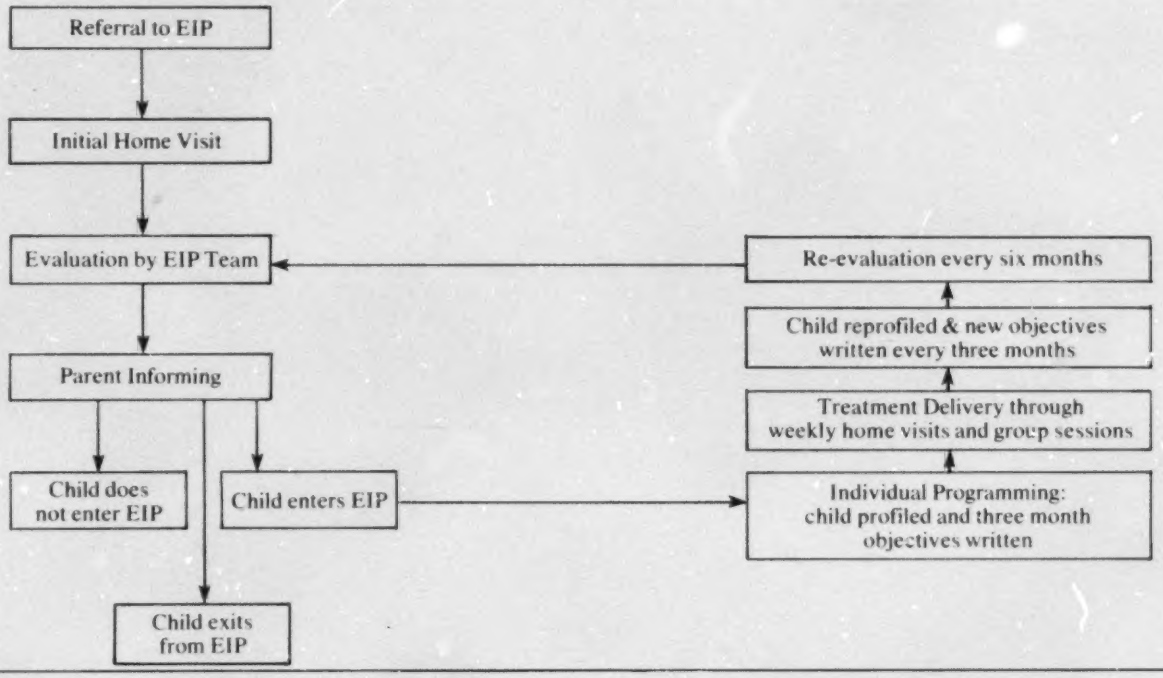
A child could be referred to the Early Intervention Project from any source ranging from a physician to a neighbor of the handicapped child. The greatest number of referrals were received from the public health nurses of the County Health Department. In most instances, the child and his family had been referred to the health department by hospital staff following the child's discharge from the hospital.

In some cases the child was referred by a family pediatrician who had diagnosed a problem after the child was discharged from the hospital. Other sources of referral to the project included hospital social workers, other projects within the University of Michigan, parental self-referrals, referrals from parents of children already in the project, local school districts, and physicians. The number of referrals from physicians increased as the project moved into its third year. While the exact reason for this was not clear, perhaps it had taken about two years of the project's work to establish credibility within the medical community through the feedback to physicians from the parents served by the project.

Initial Home Visit

When the project was notified of a referral, an intake worker (staff member) was assigned on a rotation basis to follow up the call. The assigned intake worker followed up

FIGURE 1
FLOW CHART OF EIP SERVICE DELIVERY PROCESS


Referral to EIP
Initial Home Visit
Evaluation by EIP Team
Parent Informing
Child does not enter EIP
Child enters EIP
Child exits from EIP
Re-evaluation every six months
Child reprofiled & new objectives written every three months
Treatment Delivery through weekly home visits and group sessions
Individual Programming: child profiled and three month objectives written

the referral by calling the family to arrange a home visit in order to have a more relaxed setting than meeting at a clinic. The initial home visit served several functions. First, it provided the parents with a description of the Institute and the Early Intervention Project. This initial description highlighted the project's emphasis on parental involvement and communicated to the family that their involvement was not only desired but was the only prerequisite for service delivery to their handicapped child.

The second major function of the initial home visit was to gather pertinent information about the handicapped child and his family which could be shared with other staff members. Depending upon the preference of the intake worker and the appropriateness to the situation, the intake worker conducted either an informal or formal assessment of the child. In the case of an informal assessment, the intake worker observed the child and asked questions to find out general information about the child's development, such as feeding behaviors (Does he drink from a cup?), play behaviors (What is her favorite toy and how does she play with it?), and motor development (Can he sit?). In the case of the more formal assessment, the intake worker began to complete the *Early Intervention Developmental Profile*.

A third component of the initial home visit was to obtain background information on the child. Not only did this provide the intake worker with medical information about the child, but it also gave the worker some insight into what the parents had been told about their child's handicapping condition and what they understood about the condition in relationship to the child's development.

Finally, as with all programs, the initial visit was used to fill out other necessary forms.

Initial home visits lasted aproximately an hour to an hour and a half. If parents expressed interest in the project, they were invited to come to the Institute to view a group session, and arrangements were begun for a team evaluation. The intake worker then wrote a report summarizing the initial home visit which was distributed to the Early Intervention Project team.

Team Evaluation

The next step in the process was the formal, comprehensive evaluations by the Early Intervention team which were conducted at the Institute. The completed evaluation consisted of disciplinary assessments by psychology, speech therapy, physical therapy, and occupational therapy and included a special education assessment if the child was at a three- or four-year developmental level. Additional evaluations available through the Institute were scheduled when indicated, especially audiology, pediatrics, nutrition, and social work.

The team evaluation was structured so psychological testing was done first in order to yield maximum cognitive information. If the child had a motor handicap and required special handling and/or positioning to maximize the child's manipulation skills, the occupational therapist or physical therapist was present to assist the psychologist on the item presentations. During this part of the evaluation, the speech therapist observed the child's language through a two-way mirror and recorded the verbalizations made and the receptive language demonstrated by the child.

After the psychologist had completed her portion, the speech therapist worked with the child to complete the information needed for her assessment. The motor person (OT or PT) had developed a general idea of the child's motoric functioning level based on observations of the previous assessments. The motor evaluation was completed at the end of the session, since the handling which occurred during motor assessment, e.g., reflex testing, range of motion measurement, and spasticity evaluation, was often tiring and/or upsetting for the child.

This evaluation format was often modified to meet the needs of the child, his family, or the evaluator. For example, the speech therapist usually made a visit to the child's home as part of her evaluation process to gather information on the type, quality, and extent of the child's expressive and receptive language. In some cases, it was necessary for the psychologist to see a child several times both at the Institute and in the child's home to convince the parents that she had seen a good representation of the child's abilities. This was especially true in cases in which the parent knew her child was showing a severe delay in all areas of development but was defensive about hearing those perceptions from another person.

No matter where the evaluations took place or how many sessions were needed to complete the evaluation, the parents were always present and involved in the process. Their skills in facilitating their child's responses were utilized by having them administer some of the test items and position the child. When the parents were not directly involved in the testing, they watched the evaluation through a one-way window. While watching the evaluation, the intake worker or another staff member explained what the evaluator was doing. In all cases, the evaluation was videotaped for later professional or student observation and was shown to the parents at the parent informing, if either the father or mother had not been present at the evaluation. When the evaluations were completed, time was scheduled by the intake worker for the results of the evaluation to be discussed with the parents.

Parent Informing

Parent informing was structured so that team evaluation information could be easily understood by the parents. One format had all team members present to report their disciplinary findings and recommendations to the parents. Some families preferred this format because all team members were available to answer questions about their child's development.

For other families the number of people present was too overpowering. A second format was then used in which a smaller group met either at the Institute or in the family's home. In these cases the intake worker and the psychologist presented the evaluation results from the team to the parents. The smaller group format provided a good opportunity for assisting the parents in beginning to understand their child's developmental progress in relation to his handicapping condition. For some parents these meetings were the first time they had heard the term "retardation" applied to their child. The smaller group allowed the parents to express their feelings, concerns, and questions more freely.

During parent informing, interdisciplinary and discipli-

nary recommendations were made. Interdisciplinary recommendations related to general programming to meet the child's and parents' needs; disciplinary recommendations were more specific and related to each evaluator's disciplinary expertise. The overall question dealt with at the parent informing was whether or not the Early Intervention Project would meet the needs of the child and family and, if not, what other program would best meet those needs. In most cases, the child's and family's needs could be met by the project or by the project's services supplemented by community resources. However, in some cases, the services available through the project were not appropriate to meet the child's and/or family's needs. For example, some children required more intensive programming than the project provided, i.e., a five-day-per-week program, or a program in which parents could get the respite provided by a 3 to 5 day-per-week program. In a few cases the child was not thought to be handicapped enough to need the Institute program with its obvious title as a project for handicapped children. In all cases in which the project was not recommended, the intake worker followed the case until an appropriate program or preschool was found, and the process was begun to enroll the child in that program.

When admission to the project was recommended, a case coordinator was selected. She made home visits and managed the case for the time the child and family were involved in the project. The case coordinator was usually selected to match the primary needs of the child and the family. For instance, a child whose primary handicap was a motor problem would have the occupational therapist or physical therapist as case coordinator; a language handicapped child, the speech therapist; a child with behavior problems or emotional problems, the psychologist or special educator. If the parents required counseling, the psychologist served as case coordinator.

The case coordinator's role was sometimes shared by two of the team members. An example of this was a case in which the occupational therapist and psychologist were co-case coordinators for an anophthalmic child who required developmental programming in all areas and whose parents required counseling. On alternate weeks the occupational therapist visited the home to work with the parents and the child; on the other weeks the psychologist worked with the parents on their relationship as it affected the care of the child. The assignment of a case coordinator was sometimes based on the geographic location of the family home for efficiency of service delivery.

Individual Programming

The next step in the process was to write a program of objectives to facilitate the child's development. The project developed and used the *Early Intervention Developmental Profile* as the basis for programming for each child. The *Profile* was designed to present a picture of the child's developmental status between birth and 36 months in the areas of language, self-care, perceptual/fine motor, gross motor, cognitive, and social/emotional development. On the basis of this information, objectives to facilitate the next developmental milestone to emerge were written in each of the above six areas.

The *Profile* was administered every three months by the child's case coordinator during a home visit. Short-term objectives for the next three-month period were written on the basis of the *Profile* results with input from each team member and the child's parents. The case coordinator sought advice from other team members in the formulation of objectives when she needed additional specific disciplinary expertise. The parents were consulted to determine which objectives were important to them. For example, while the team members may have felt it was important to begin toilet-training the child, the parents may have felt that it was more important to concentrate solely on self-feeding.

The project's program was set up so that every three months each child was re-profiled, evaluated on whether he had passed or failed each objective, and had new objectives written. If a child entered the program in the middle or towards the end of a 12-week program cycle, interim objectives were written for him to accomplish in the time remaining in the cycle.

Treatment Delivery

The short-term objectives were the basis of the child's program for each three-month period. Activities which facilitated meeting the objectives were taught to the parents or other primary care givers (babysitters, grandparents, etc.) during home visits and group sessions.

Each family was visited weekly or once every two weeks by the case coordinator for approximately one hour. During the visit, the case coordinator modeled and taught the parents specific disciplinary skills needed to care for the child. Positioning, handling and relaxation techniques, behavioral management, oral-motor facilitation, and structured play situations were taught as necessary to help facilitate the accomplishment of objectives in all programmed areas.

Home visits had several unique advantages. They provided the home visitor with a sense of what the family could realistically accomplish with their child when the economic or emotional limitations existing in the home or family were considered. Some home visits were made when the child's entire family was home. This allowed the working parent and siblings to be involved in the child's care. Also, depending upon what time of day the visits were made, they were used to teach feeding and dressing skills within the child's established routine.

Objectives were also worked on during weekly group sessions. Most of the children attended a group session once a week for two hours with either his parent(s) or primary care giver. During the sessions each child and parent worked on a one-to-one basis while the staff members circulated to each child, suggesting activities or modeling treatment techniques for the parent.

The group sessions had the following advantages: they allowed each member of the team to apply his disciplinary skills to the child's needs which could then be supported and carried out by the home visitor; they provided a setting in which parents could spontaneously share with each other the experiences they had with their child or ideas which they found useful in working with their child; and they provided an opportunity for parents to give emotional support to each other through their child's successful as well as difficult moments.

Reassessment

Each child was re-evaluated every three months on the *Profile* and new objectives were written. Every six months each child received the same full-scale, formal disciplinary re-evaluations as when he entered the project, followed by another parent informing and recommendations for the kind of program needed by the child and his family. This process of reassessment was continued every six months as long as the child was in the program.

Exit

Children were exited from the project when another program seemed to be more appropriate, when the family moved out of the geographic area, and when the project ended. Exit reports were written. These reports briefly outlined the child's involvement in the project, the clinical and developmental status of the child at exit, and the program to which the child was referred.

FOSTERING PARENT INVOLVEMENT

Sara L. Brown

Philosophy of Involvement

From the beginning, the EIP staff attempted to involve its parents in a variety of ways and at a variety of skill levels. The philosophy upholding this attempt was basically threefold: (1) children in the attachment period need parents rather than teachers; (2) parents need skills in dealing with their child's unique needs; and (3) children should be handled as part of a total family system.

Many handicapped children move through the attachment-separation stages at delayed rates either because of their own handicaps or because of parental sheltering during the early years. Recent research indicates that the most effective intervention occurs during the early years (birth to three) in the natural environment with the natural surrogate or parent. This is also a time when many parents are unwilling to separate from their children for educational or therapeutic placements.

The intervention plan, therefore, not only included the parents but provided the parents with the opportunity and the skills to become primary treatment givers. During the three years of project operation, the EIP staff involved parents in all aspects of planning, evaluation, and programming for their child, depending on parental knowledge, skill, and desire to participate. All parents were trained to handle and stimulate their child in ways individualized to their child's strengths and weaknesses. All parents received counsel and information regarding their child's handicapping condition and normal child development. All mothers and a number of fathers participated in the weekly group sessions and were involved in treating their own child during the sessions. Many parents assisted during the psychological, speech, and developmental evaluations. Some took part in writing their child's objectives every three months.

Most parents are genuinely concerned for the welfare of their children. They are with their child on a day-to-day basis and best know his needs, handicaps, and daily schedule. Probably the greatest need that parents express is to feel competent in dealing with their child on a daily basis. Parents of severely handicapped children are vulnerable to heightened insecurities regarding the psychological and physical development of their child. The mother of a spastic cerebral palsied child may be concerned about the daily handling and physical positioning of her child. The father of an autistic child may be concerned about his role in the daily care and discipline of his child. Parents of a Down's syndrome child may be eager to enhance their child's growth in all areas of development.

Professionals dealing with parents are challenged to enhance the parents' knowledge and skills in order to promote feelings of successful parent-child interactions and competencies on the part of the parents. It is the parent, not the therapist, who cares for, stimulates, and interacts with the child on a twenty-four-hour a day basis and who must have the skills necessary to do so successfully.

Like the normal child, the handicapped child is part of a total family unit. The EIP staff operated under the rationale that intervention which attempts to separate a child from his natural environment is apt to be unsuccessful. Intervention which attempts to consider the total family constellation, its interactional patterns, its unique style, and its problem areas, is more likely to be effective. Many families have other problems as intrusive as the one represented by their child's handicap and must have help in dealing with these before they can begin to handle their child's handicap as a major priority. Such problems as role expectancies, financial or marriage crises, and extended family illnesses all tend to cloud a family's immediate priorities. On the other hand, some families need help in placing their handicapped child's needs into perspective with the needs of the total family unit. Siblings, spouse, and parental self-fulfillment are all needs which have to be considered if the handicapped child's needs are to be accepted as a legitimate part of the whole.

Project parents demonstrated their abilities to handle and stimulate their children in a number of unique and creative ways. One father built a special highchair for his spastic daughter; another cared for his child when he was home from work in the evenings. Some mothers shared their problems and mutually solved them. The most obvious area of effective training, however, was seen in relation to the community where parents became advocates for themselves and their children regarding such issues as education, respite care, and financial help. Because of Michigan's mandatory education act, handicapped children have a right to educational services between the ages of birth and twenty-five. EIP parents were involved in a number of committees (including their own child's Education Planning and Placement Committee) through which they sought services for their children. As a result, many children received services that would not otherwise have been provided, such as bus service, transportation reimbursement, financial assistance for attendance at normal nursery schools, and direct or consultation services from ancillary professionals (speech, occupational and physical therapists and other special resource consultants). Parents also assisted one another in finding appropriate placements and services for their children. One mother was particularly helpful in contacting new mothers of Down's syndrome children and in supporting and counseling them with regard to available services.

The EIP staff encouraged parents to participate in additional activities related to the project. Several took part in group discussions, and others gave lecture presentations during conferences or workshops. A few wrote articles for lay or professional periodicals.

Strategy and Rationale for Involvement

The strategies for involving parents were structured to meet each individual parent's needs, level of skill, education, and time available for involvement. Families were assigned a case coordinator who was responsible for making home visits, contacting other appropriate resources

and agencies, and monitoring the child's and family's progress. As the project continued, the staff saw a need for involving other staff members in home visit consultations in their areas of disciplinary expertise, in psychological counseling and support, or in contacts with other agencies such as school districts and medical centers. Co-case coordinators were appointed and eased some of the pressures created when one staff member carried a particularly involved family, i.e., a family with severe health or dynamic problems. This alleviated the risk of strong attachment and dependence on a single staff member.

Another strategy for involving parents was direct training in handling, stimulating, and interacting techniques. The staff felt that the more knowledgeable a parent became about his child's handicap and the more skills he acquired in dealing with that handicap, the more he would increase his involvement in the daily care and stimulation of his child. For most parents this was a valid assumption, although a few tended to intellectualize and were often unable to interact with their child on an emotional level.

In addition to knowledge, parents need skills. The group sessions and home visits involved parents in play activities with their child which met specific developmental objectives. Initially, staff members modeled various activities which were appropriate to the child's level and abilities; later parents modeled and verbalized for one another. Normal children and other handicapped children served as developmental models for each other and for parents at various levels of skill development in six areas: cognition, language, social/emotional, gross motor, perceptual/fine motor, and self-care. Parents were encouraged to work with other children to gain knowledge of other handicapping conditions and to gain competency in adapting activities to different skill levels.

Throughout the home visits and group sessions, emphasis was placed on fostering mothering skills. The staff emphasized "mother" and attempted to de-emphasize "teacher." The rationale for this strategy was based on recent attachment theory and on realistic expectations. Parents spend twenty-four hours a day with their child, and it often becomes difficult for them to separate roles. The staff encouraged the parents to incorporate all the child's developmental objectives into his normal daily routine and play periods. Most therapeutic activities were easily worked into the home schedule. For instance, range of motion exercises were done during bath time and diapering, oral motor activities during feeding, and correct positioning of the motorically impaired child throughout the day.

Attitudes

Because the successful rearing of a handicapped child is determined in part by parental attitudes, any program dealing with families should attempt to identify and deal with a variety of attitudes ranging from rejection and anger to martyrdom. Parents who have worked through a hierarchy of emotions can aid other parents in expressing their own feelings of anger, frustration, fear, and helplessness. All professionals working with families of the handicapped, from obstetricians to teachers, should be aware of the variety of feelings and ambivalent emotions each parent has toward his own child, particularly those centered around the child's handicapping condition. Parents come in many varieties. They do not all have the same reactions or the same needs, but they all have to work through their own feelings at their own rate.

The EIP parents expressed their needs to hear what they were ready to hear. Several mothers were happy to have had some time with their infants as "normal" babies before learning that they were "handicapped." Another mother said she wished she had had more time before she was informed that her daughter had Down's syndrome. Other parents said that they knew something was wrong, but nobody would tell them. Most parents agreed that they expected honesty, but only to the extent that they could handle it. One mother suggested asking the new parent, "How much do you want to know about your child's condition?"

These suggestions from parents are appropriate not only during the postpartum and infancy period but throughout the child's life. Professionals in a variety of medical, educational, and support fields have contact with and should be aware of the needs of parents throughout a handicapped child's life-span. The parent of a school-aged child will need a sensitive professional to deal with ongoing educational programming. The parent of a prepuberty child will need help in dealing with sexual issues from a person who will be sensitive to that particular parent's level of acceptance. When the child reaches adolescence or adulthood, the parent again needs sensitive professional help with regard to community placement and related issues.

The question of labels was brought up by several parents. One parent noted that the label "retarded" had had so many negative connotations that she wasn't ready to accept it. Other mothers on hearing labels such as Down's syndrome, cerebral palsy, etc., applied to their child, borrowed books from the library and became voracious readers, often of obsolete materials. A few mothers never left the stage of intellectualizing the problem. They accepted the child's handicap on a rational level but were too vulnerable to cope with it emotionally. One child was labeled as having "a progressive metabolic syndrome," but very little other advice or counsel was given the parents. After several months of adjusting to the child's diagnosis and after reaching the acceptance stage, they were told that the medical tests did not confirm the syndrome. The child had, however, by this time become severely delayed. The mother expressed her frustration in having to deal with a handicap of unknown nature; she actually preferred the label, even with all its connotations.

Many EIP parents expressed difficulty in dealing with their other children. Many siblings became jealous because of the time each parent had to spend with the handicapped child's medical problems, physical handling, feeding, physical therapy, etc. With the help of EIP staff members, some parents began to use the siblings as members of the "team." Siblings, for the most part, responded very favorably to such reliance upon them. Few parents, however, were able to deal with the attitudes of their normal children toward the handicapping condition. Such failure may have been due in part to the desire to shelter siblings from the hurt parents felt when they themselves were initially informed; it may also have been due to the uncertainty as to *how* to tell them. In reply to questions of how siblings might be informed, the EIP staff suggested

that parents be honest with siblings and answer their questions at the appropriate level of understanding. Parents were advised to provide the siblings with labels to help them in verbalizing and explaining the handicap to their friends ("retarded," "cerebral palsied"). A label given by the parent is free from connotation and can be an offensive weapon for siblings and the child against teasing from friends.

One of the most successful ways of involving parents was through the use of the *Early Intervention Developmental Profile*. Parents assisted in recording and administering some of the items on the *Profile*. More important, however, the *Profile* was seen as a model of child development and helped to temper parental expectations in the six developmental areas covered by the *Profile*. With professional guidance, the parents were helped to view the child's strengths and weaknesses in various areas and to work toward the next goal. Parents were trained to analyze a task and to break it down into its component parts and required levels of skill. When they saw the complexity of a task, many parents became satisfied, and even excited, when their child achieved a small step toward a larger behavior milestone.

Working with parents as members of the treatment team was not only challenging, but rewarding. Without exception, parents proved deserving of the respect given them and responded well to efforts to involve them as important members of the planning and treatment team.

SUPPORTIVE SERVICES

Carol M. Donovan

EDITOR'S NOTE: *It can be anticipated that children having a wide range of complex problems, as did EIP children, will need many supportive services. The project's setting (a university affiliated facility which emphasized interdisciplinary training of many disciplines) gave the project access to a wide variety of supportive services. Relationships with non-university community agencies and programs, such as health departments, school systems, advocacy groups, and parent associations, opened other possibilities for services. A third source of supportive services resulted from the initiative and ingenuity of EIP staff members, underlining the fact that program personnel for very young and multiply handicapped children must assume many roles and responsibilities which are usually outside the responsibilities of school personnel. EIP staff members provided a model of such services.*

As schools develop and implement programs for handicapped infants and young children, they must be prepared to provide supportive services, either directly or indirectly.

Because of the major objective of supporting the parents as the major treatment providers for their handicapped child, it was necessary to focus as much on the parents' needs as on the children's in the providing of supportive services.

The handicapped child who is identified very early typically has a wide variety of needs due to the complexity or severity of the handicap. Infants identified soon after birth may be children with (1) the obvious stigmata of genetic syndromes which have a variety of defects associated with them, such as Down's syndrome, (2) obvious congenital malformations, such as myelomeningocele, or (3) a suspicious birth history and postnatal course with signs which indicate severe brain damage. These children are usually multiply handicapped and may present a variety of problems such as cardio-respiratory defects, musculo-skeletal deformities, hearing and vision deficits, seizures, and/or "failure to thrive" problems. Hence, both child and family may require supportive services to cope with a variety of needs.

Supportive Services for Children

The majority of the children served by the Early Intervention Project could accurately be described as multiply handicapped. Some children had disabilities secondary to their major handicap, e.g., strabismus in a Down's syndrome child, mild conductive hearing loss in a cerebral palsied child, and legal blindness in another Down's syndrome child. Some of these secondary conditions were obvious when the child entered the project; others were identified later. The experience of the EIP showed that pediatric, audiological, ophthalmological, dental, and nutritional services were required as associated health problems of the children were identified. Assistance from these disciplines was obtainable through the Institute and the University of Michigan.

Audiology

All EIP children were routinely screened by the audiological services at the Institute. Referral for thorough evaluation was immediate for the child with a primary diagnosis such as post-meningitis brain damage, unexplained language delay, or a history of chronic ear infections. In other cases, the staff carefully monitored the child's response to sound and then initiated a referral if the child's responses seemed to be questionable.

Since it was extremely difficult to judge accurately the degree of hearing loss in children who were as young or as multiply handicapped as those the project covered, the staff worked with the parents to help them become more accurate observers of their child's sensory functions. The parents' accurate input plus staff evaluations thus provided the clinicians doing the audiological examinations with more data on which to base their clinical judgment. In one case, hearing loss was discovered in an infant as young as *one* month who was served by the project for other referring conditions. Other less dramatic cases also showed hearing losses at early ages.

Ophthalmology

Ophthalmological examinations were scheduled in the same way as audiological examinations, i.e., children who had obvious strabismus, nystagmus, or had been labeled by pediatricians as cortically blind were immediately referred. Others were carefully observed for evidence of visual problems. It is important to monitor the rapid changes of any young, developing child, and those with special problems require even more diligence. For example, although one Down's syndrome child had had ophthalmological services almost from birth, it was not until near the end of her fourth year that legal blindness was diagnosed. A significant increase in her visual attentiveness was noted after she started to wear glasses.

Nutrition

Another component of the Institute which the project staff found invaluable was nutrition consultation services. The EIP benefited from a number of nutrition interns who were on year-long placements at ISMRRD. These interns collected nutritional data on the children, including monthly height and weight records, and were available during group sessions to answer general dietary questions for the parents. Three-day food recalls were collected for each child, and feedback was given to parents on the content of the child's diet with advice on how to increase or cut back on caloric intake and still continue to provide sound nutritional balance.

A number of the children had such severe nutritional problems that they took precedence over anything else.

The nutritionist worked with each child's parents, the Institute pediatricians, and the child's own pediatrician to alter the child's diet. One infant who was referred to the project at age seven months was being fed only with a naso-gastric tube due to his poor sucking ability. His mother wanted to feed him in a more normal way. With the pediatrician's permission and with close monitoring of the child's weight by the home visitor, public health nurse, and nutritionist, the tube was removed. The nutritionist's suggestion of putting the baby on Jello milk and feeding him on all solids was useful in view of his difficulty in sucking.

Two other children had severe dietary problems, a three-year-old cerebral palsied child who weighed only ten pounds, eight ounces, and a two-year-old cerebral palsied child who had been hospitalized frequently for gastrointestinal problems. Referral to an Institute pediatrician who specialized in problems of childhood allergies resulted in both children being placed on a lamb-based formula and Benadryl. Close teamwork of parents, nutritionist, pediatrician, and EIP staff resulted in weight gains for both children.

The nutritionists were also available for consultation with community personnel who had contact with children, such as private pediatricians, public health nurses, teachers, and day care staff.

With the help of the nutritionists, the EIP staff gained enough knowledge to advise parents on ways of starting children on table foods, balanced diets, and nutritional snacks. They also gained an increased awareness of when direct nutritional counseling to parents should be recommended.

Dentistry

Project parents had access to the Institute's dental hygienist and dentist. These dental personnel often came to group sessions to chat informally with parents. In many children with developmental disabilities, tooth eruption is often slowed down, and the teeth do not always appear in normal sequence. This kind of information helped parents understand why, for example, at age eighteen months their child had only two teeth. The dental hygienist instructed parents in proper care of their child's gums and teeth. This was of particular concern to the parents of children who were on seizure medication which affected the child's gums, causing overgrowth and a hazard to a healthy mouth. The hygienist also worked directly with the older preschool children and taught them how to brush correctly. The dentist advised EIP staff and parents when the child should start seeing a dentist for on-going dental care. The parents were given lists of pedodontists in their area as well as the opportunity to attend the Institute dental clinic.

Pediatrics

One of the pediatricians at the Institute was regularly available to EIP staff and parents during the group sessions to answer questions on a variety of things that were of immediate concern. She also supplied orders for physical therapy treatment when children entered the project. She was able to document and confirm when the staff and parents suspected a case of possible breakthrough seizure activity and a case of lung congestion. Children under the care of a private pediatrician were referred to that physician to check on the medication or receive acute care treatment. When this was not the most practical solution, the Institute pediatrician prescribed or gave the physical therapist specific treatment orders, such as teaching postural drainage to the parents.

The Institute pediatrician also worked in the Pediatric Rehabilitation Clinic at University Hospital. Project children such as the myelomeningocele and amputee children were seen there with the Institute pediatrician serving as liaison. In this way both the clinic and the project had accurate information on each child's condition. The pediatrician directly advised parents as to the need for high-top shoes, Thomas heels, and other appliances when the physical therapist suggested moving to such support. This was a more practical solution than waiting for an appointment at the Pediatric Rehabilitation Clinic.

The EIP staff encouraged its parents to locate a private pediatrician who could provide on-going medical care to their child. The project staff and Institute pediatricians compiled a list of local pediatricians who were available to accept new referrals. In addition to local pediatricians, the Institute pediatrician also made referrals to orthopedists, cardiologists, neurologists, psychiatrists, and general practitioners.

Psychological Consultation

A direct service to children that the EIP staff psychologist and other Institute personnel provided was psychiatric-psychological consultation and treatment. They consulted with other EIP staff and parents on methods for enhancing on-going programming based on the children's psychological needs. More specifically, when two preschoolers who had initially been referred to the project because of language delay were judged to have overlying emotional problems, the EIP psychologist and another psychologist provided on-going play therapy sessions on a twice weekly or weekly basis. The parents were also offered alternative services through community mental health clinics or private practitioners.

Indirect Support

In addition to the direct services described above, indirect services were available which benefited the children by providing EIP staff with consultation. For example, an EIP staff member could request the help of her own disciplinary associates at the Institute. A specific child, an area of disability, or a constellation of behaviors might be presented to the disciplinary group for suggestions of management or general problem-solving. Other Institute faculty and staff were often asked to provide consultation to the EIP staff member as they related to specific children.

Community Support Services

A variety of school programs, both public and private, were the major community resources which benefited EIP children. The project staff decided that some children would benefit more from a full-time school placement in either a structured special education program or a normal nursery school or kindergarten than they would from the EIP program.

Several full-time programs were identified. Washtenaw Intermediate School District provided programs for trainable and severely mentally impaired children. Local school districts provided speech and hearing consultants to normal nursery schools. The Rackham School of Eastern Michigan University's Special Education Department provided an intensive neurodevelopmental program for cerebral palsied children. High Scope Foundation in Ypsilanti conducted a "First Chance" project which integrated handicapped children into its cognitively-oriented preschool program. The EIP staff assisted the parents in referring the child to an appropriate program.

A list of possible normal nursery school or day care placements which would take handicapped children was compiled as a result of a survey designed and carried out by the EIP staff. This survey consisted of three parts: (1) data on school size, location, tuition, and staffing pattern; (2) evaluation of equipment, programming, and staff-child interaction; and (3) interview with the director on the center's willingness to accept handicapped children. The compiled list provided specific information which could be used as a basis for referring parents to desirable, normal placements.

Some of the children were exited from the EIP when they had been successfully integrated into a new program, with the new school and local school districts supplementing the program with appropriate support services. In other cases, the children attended normal nursery school, or another special program, and took part in EIP programs with EIP staff members providing consultation to the other centers. Consultation to other agencies focused on helping each center mesh the needs of the EIP handicapped child with the agency's capabilities. Strong emphasis was placed on getting each agency to involve parents more effectively by setting up more efficient communication patterns between parents and agency. The centers for normal children were urged to set performance expectations in keeping with the child's ability to function in a structured group situation.

It sometimes happened that what appeared to be an appropriate setting did not prove to be so after a trial period. In these cases, children were discontinued in the new setting and returned to the EIP. In some cases the reason for inappropriate placement may have been the deteriorating condition of the child's medical status.

Since many of the community programs operated on a school year calendar and the EIP was operating all year, some children were accepted during the summer months only. This was done after careful consideration and discussion with the parents and personnel of the other center. A specific reason for entry into the EIP for the summer only was required, such as preparing a child to go into a regular kindergarten, allowing for ongoing diagnosis over a period of time, or providing a period of specialized treatment.

Supportive Services for Parents

When one first thinks about the term "early intervention," what instantly comes to mind is immediate intervention for the child. Professionals from medicine, allied health, and education stand ready to assist the child. However, the child is never alone in his need for help. The child is an integral part of his family structure. Family members themselves may actually have a higher requirement for "early intervention" than the child in terms of their needs as individuals or as parents of a handicapped child.

Many parents were referred to the project by hospital social workers or public health nurses. In some cases, these professionals had been able to deal with parental concerns and questions about the meaning of various diagnostic labels used in medical, developmental, or educational findings. In other cases, they had served only as a conduit to facilitate a referral from a diagnosis to a service program. Part of the EIP case coordinator's responsibility during the initial home visit was to ascertain the family's immediate needs and their knowledge of community resources. This information was extremely valuable in trying to build rapport with parents of newly identified handicapped children, because EIP staff served as a resource link from the start. Parents were often relieved to hear about the variety of services that might be available to their family and child. Families were routinely told about the provisions of the Michigan Mandatory Special Education Act for alternative programs. If families required relief from financial burdens, they were often referred to Crippled Children's Services and were told of the various Social Services programs.

Transportation was not provided by the EIP and was an area of real need for some families. Volunteer organizations were contacted for help with transportation. Parents were also referred to the local Red Cross, to Social Services, and to church groups. Volunteer drivers brought some children and parents to group sessions on a regular basis. Some parents started to contact these agencies on their own for help with transportation for clinic visits and doctor's appointments. Some school systems provided help with transportation, especially if they had been unable to implement their own mandatory special education requirements by the target deadline.

In addition to community resources, the home visitor explored with the parents what information they had about their child's diagnostic label. Some parents wished to hear a full explanation of their child's condition; others wished to have only specific questions answered. The home visitor could either supply the facts or direct the parents to persons or reading materials. Parents who had children with genetic syndromes were referred back to the genetic clinic at the University of Michigan Hospital for additional counseling. The Institute's Training Resources Center (library) was made available to parents who wished to read further.

Other parents had concerns that dealt with more specific problems regarding the care and management of their child. For example, finding the right nipple so their baby could suck better or helping to eliminate undesirable behavior, e.g., tantrums, were specific ways in which the project supported parents. As the parents developed trust in the project staff, they became more willing to express their feelings. Sometimes sharing of feelings occurred on the first visit, because the parents were ready to have someone listen. In other cases, the building of a trusting relationship took longer. The home visitors learned to look for subtle cues that parents were ready to discuss their concerns. Many parents acknowledged the support that the project staff and other parents gave them. Be-

cause the home visitor functioned in a supportive as well as therapeutic role, visits were also made to the hospital when some of the children became acutely ill.

The primary home visitors learned to cope with crisis situations by acquiring new skills which had not been included in their professional training. Evictions, lack of heat or light, acute alcoholism, a mother's desire for an abortion, truant siblings, and other problems often took on far more importance than the family's handicapped child. The staff was working with a dynamic system in which the priorities were constantly changing. High priorities of grave concern had to be dealt with before the mother could focus on her handicapped child's need for a stimulating play period. Due to the truly complex nature of some of the families and their needs, the project sought assistance from the Institute social work program. Social work students under the supervision of staff members were assigned to families on an on-going basis. The social work program staff also served as consultants to the project staff on ways of dealing more effectively with families.

Families included not only parent(s) and child but also siblings and other extended family members. On a number of occasions, the EIP home visitor had concerns about a child's siblings and made referrals to appropriate community agencies. For example, a pregnant fifteen-year-old sibling was referred to a teenage mothers' program and an eight-year-old brother to a "Big Brother" program.

Some of the problems which the parents faced were so inhibiting to normal functioning that referrals were made to mental health clinics and private therapists for help in solving marital and personal difficulties.

The ultimate goal of the home visitor was to get parents to the point of feeling competent enough to work with their child within the context of their family system for the benefit of the entire family. This process involved teaching parents about normal child development and how to focus on their child at his current level of development. The parents were then helped to set appropriate expectations for their child's next logical goal and to determine ways in which they could help the child reach the goal. Parents eventually became more aggressive and active in looking for community resources and in becoming advocates for their child in medical, social, and educational systems.

The project staff members often accompanied parents to hospital clinic visits, where the staff member could both give and get direct input from physicians as well as encourage parents to ask appropriate questions of the physicians in order to understand medical terms used to describe their child. In the educational system, parents were encouraged to take active parts in program discussion and decisions during the Education Planning and Placement Committee meetings held for their child. Parents were advised of the role of the advocacy project of the local Association for Retarded Citizens for assisting parents in securing appropriate services for their handicapped child.

Many parents became active members in local and national groups such as the Association for Retarded Citizens, where their roles as parents grew from being advocates for their individual child to being articulate spokesmen for all handicapped children.

EVALUATION

Sally J. Rogers

The Early Intervention Project attempted to evaluate its effectiveness in positively affecting the children's development and in parent training. The questions that were explored focused on: (a) descriptions and changes in the children's developmental patterns and rate; (b) the parents' attitudes and parenting behaviors, and (c) interactions between (a) and (b). In order to answer these questions, the project collected data which would answer the following specific questions:

For Children

- What were the characteristics of the children referred to the project?
- How stable were the children's test results?
- What was the general trend in developmental rate over time?
- What were the correlations among changes in cognitive, social, motor, and language areas?
- Did developmental level predetermine performance on individualized objectives?
- How did the *Early Intervention Developmental Profile* compare with standardized tests?
- What were the characteristics of children whose developmental rates increased?

For Parents

- What was the mothers' behavior when working with their children?
- What was the relationship between a mother's behavior and her child's age?
- What were the attitudes of the parents about having a handicapped child?
- Did mothers and fathers differ significantly in their attitudes?
- Was there a relationship between attitude and behavior?

For Correlations Between Children's and Parents' Variables

- What parent behaviors and attitudes correlated with increases in their child's development rate?
- Was there a difference between the father's and mother's attitudes as correlated with their child's level of development?

Methodology

Many of the current, well-known intervention programs for the 0-3 age group include parent training, hoping to teach parents skills that will be carried over to the home environment, thus increasing the quantity and/or quality of stimulation that the child receives in all settings. Yet, data on such parental effects are absent from the literature. While more and more programs are recognizing the need to work with parents in order to adequately intervene in children's development, it has not been recognized that such an approach places the parents in a treatment program.

The hypothesis that parent involvement is critical to optimum child treatment needs to be evaluated, for although common sense dictates its rightness, the amount of time and money involved requires that the hypothesis be critically examined. If parent training proves to be an integral part of optimum child treatment, then the effectiveness of various approaches to parent training needs to be determined so that optimal models of parent training can be identified. Such effectiveness measures are not difficult to apply to parent training, for while changes in infant behavior due to program effects are notoriously difficult to evaluate, changes in adult attitudes and behavior due to program effects are more suited to measurement and comparison.

For these reasons, the evaluation of the Early Intervention Project's effectiveness focused on both parent training and child development. Standardized data on all aspects of child development were gathered at frequent intervals in order to allow the exploration of developmental patterns over one to two-year periods. Data on parental attitudes and behaviors were also gathered at set intervals during enrollment to provide some measure of the effects of the Early Intervention Project's approach to parent training.

The children's treatment consisted of stimulation activities in the areas of cognitive, motor, language, social, and self-care, presented via a playful medium. The stimulation activities were carried out in several ways: (1) during a weekly two-hour session at the treatment center, the mother provided the stimulation, supervised by the staff; (2) during a weekly hour and a half home visit, the home visitor provided most of the stimulation; and (3) during the child's daily home routine, both parents provided stimulation activities.

The parents' treatment consisted of (1) the acquisition of general information about the nature of handicapping conditions and their child's handicap in particular, via formal presentations at parent meetings, formal and informal meetings with the staff, literature made available to them, and discussions with other parents; (2) acquisition of techniques for child treatment via instruction, demonstration, and modeling by staff members and other parents; films and discussions at parent meetings; and various books and pamphlets. Such training occurred at the weekly center-based sessions (attended primarily by mothers), weekly home visits, and monthly two-hour parent group meetings.

Measures of Child Development Used

A total of 69 children, 0-5 years old, with handicaps in cognitive, language, motor, or social development were referred to the project. Some 41 children received treatment ranging from 3 months to 33 months in duration, while 25 other children (for reasons largely beyond the project's control) received evaluation services only. Be-

cause the evaluation plan was put into effect during the project's second year, the number of children for whom complete data was available is somewhat smaller. The actual number of children involved in various comparisons is reported in each of the tables.

The children were referred to the program from many sources (parents, pediatricians, public health nurses) and represented a wide range of handicapping conditions. All children who received treatment were from Washtenaw, Livingston, or Monroe counties and represented a mixture of ethnic and socio-economic groups.

Several sets of data were used to monitor the children's progress. The first set, the *objectives*, concerned the behavioral objectives written for each child receiving treatment. These objectives, generally 12-18 in number, were written to cover a three-month period, and at the end of three months each objective was scored either pass (P) for successful fulfillment of the objective, pass/fail (PF) for near-completion or inconsistent success on the objective, and fail (F) for inability to perform the desired behavior. The total of P's, PF's, and F's attained during their treatment was summed for each child.

The second set of child data consisted of each child's performances on the *Early Intervention Developmental Profile* (Rogers, D'Eugenio, Brown, Donovan, Lynch, 1975). Each child receiving treatment during the last two years of the project was evaluated on the *Profile* every three months, and a performance level for each of the six *Profile* scales was computed according to the procedure described by Rogers and D'Eugenio (1977) for each evaluation. This procedure provided useful data on the validity and reliability of the *Profile* as well as illustrating behavioral attainments made by each child during a three-month period.

The third set of child data—standardized data—consisted of the results of formal psychological, speech and language, and occupational/physical therapy assessments. Each child was assessed formally every six months, beginning with the diagnostic assessments preceding the child's enrollment in the project, and ending with an exit assessment when the child left the project. The formal assessments provided the child's developmental age on standardized infant and preschool instruments. Tests used included the Bayley Scales of Infant Development, the Stanford-Binet Intelligence Scale, the Leiter International Performance Scale, the Vineland Social Maturity Scale, and the Bzoch-League Receptive Expressive Emergent Language Scale (REEL).

In order to examine the children's performances on standardized tests, it was necessary to find a method of representing each child's performance which could be applied to all test scores, reflect chronological age discrepancies, and allow test performances across time to be compared. Although deviation I.Q. (or D.Q. in the case of the Bayley) scores would meet these criteria for psychological assessments, assessment tools in language and social areas did not provide deviation scores. Also, for those children functioning at less than a D.Q. of 50 on the Bayley, deviation scores did not exist.

Therefore, because of the need to compare test results, it was decided to use an index of developmental rate, calculated by dividing developmental level by chronological age, to represent performances on all standardized tests. The raw scores were converted to the normal developmental level most closely corresponding to the raw score, and that developmental level, divided by the child's chronological age in months, yielded the developmental rate for each test. Six categories of developmental rate were used:

Profound delay: a developmental rate less than $^1/_5$ the normal rate (normal rate: developmental age equal to chronological age).
Severe delay: between $^1/_5$ and $^1/_3$ the normal rate.
Moderate delay: $^1/_3$ to $^1/_2$ the normal rate.
Mild delay: $^1/_2$ to $^2/_3$ the normal rate.
Borderline delay: $^2/_3$ to $^4/_5$ the normal rate.
Normal range: $^4/_5$ to greater than the normal rate.

It is recognized that five of those categories have been defined as levels of retardation by the American Association of Mental Deficiency (AAMD) (Grossman, 1973). Though classification into the AAMD categories would be dependent on deviation I.Q. scores and adaptive behavior measures, it was decided to use those categories to classify the index of developmental rate. For the purposes of evaluating the project, these categories closely reflect the degree of developmental delay demonstrated by the children according to AAMD standards.

Measures of Parent Behavior and Attitude Used

The parents of the 41 children receiving treatment formed the population from which parent data were gathered. Because parental data were gathered in the second and third years of the project, the actual sample is smaller. Behavior samples were gathered on 24 mothers, and attitude forms were completed by 23 sets of parents.

Two instruments were used to examine parental behaviors and attitudes. The Behavior Recording Form, adapted from Leary, Kaufman and Balsam (1969) for use on this project, was a behavioral time sample form which allowed one to note the presence or absence of 10 parental behaviors occurring during interactions with the child. Twenty-four mothers were observed and scored during treatment sessions, first during a session shortly after their child's entrance into the project, and again six months later. Scoring occurred during twenty 10-second time samples. When a parent and child were together in some activity, scoring was begun, and ten samples were taken without pause. A 15-30 minute period was allowed to elapse and the procedure was repeated. There were ten possible behaviors which could be scored at the end of each ten-second observation: five positive behaviors (physical contact, verbal contact, facial contact, proper handling, and redirecting attention) and five negative behaviors (negative physical contact, verbal contact, facial contact, handling techniques, and absence of any interaction). All behaviors occurring at the end of the ten-second sample were scored.

The Parent Survey Form was developed by Hoffman and Salant (1974) as a self-report scale to measure mothers' attitudes about having a handicapped child and was revised by this author to include both parents. The parents of all children in the treatment program completed a Parent Survey Form every six months, beginning at the time of the child's enrollment in the program and ending at his exit.

Data Collection Procedures

All data on parents and children were collected by members of the treatment staff: a speech and language pathologist, an occupational therapist, a physical therapist, a psychologist, and a special educator. The behavioral objectives were scored by the rater who carried out the home treatments for each child, the home visitor. The *Profile* was administered and scored by the home visitor either during home treatment or center sessions. Each of the raters was trained to administer and score all scales of the *Profile* by the entire team until percent agreement among team members reached .85 or better, after which each rater administered and scored the *Profile* independently. The standardized evaluations for each child were carried out by members of the appropriate discipline; the motor evaluation was carried out by the occupational therapist or physical therapist, the language evaluation by the speech and language pathologist, and the intellectual and social evaluations by the psychologist. These evaluations were conducted individually in small evaluation rooms at the center, with the parent either observing or present in the room.

The Behavior Recording Form was initially administered by two raters, the psychologist and the special educator. Once inter-rater reliability reached 95 percent agreement, one rater, the psychologist, gathered all Behavior Recording Form data. The Parent Survey Form was filled out by the parents in their home. When the gathering of parent data was initially planned, each family received a letter explaining that the Behavior Recording Form was an observation of the kind of interactions parents and children use, and that the Parent Survey Form was a description of the feelings and thoughts.

Before the findings themselves are discussed, some comments about the evaluation process seem in order. Data gathering in the early months of treatment was relaxed, and the evaluation process itself was not fully formulated until the second year of the project. These circumstances could not be helped and data for children and their parents entering the project after December 1974 were not affected.

Although the children were to be evaluated every six months, this schedule was somewhat difficult to adhere to strictly because of frequent illnesses, holidays, and limitations of the evaluator's time. Determining the average index change rates for the children would have been simplified if the time intervals were evenly spaced.

A third area of difficulty in data collection involved the parent data. Since the attitude forms were filled out by the parents at home, the collection of this data was hampered by parental forgetfulness, resistance, and inadvertent loss of forms. Since the forms were to be mailed in rather than collected, it was difficult to keep tight controls on the progress of data collection. Behavior observation data was likewise not as tightly controlled as it might have been. The sometimes rapid turnover of parents and the constant flow of new parents made pre-treatment and post-treatment observations difficult.

Findings Regarding the Children

What were the characteristics of the children referred to the project?

As can be seen in Table 1, approximately 50% of the children evaluated and treated, and 77% of the children who were only evaluated, had cognitive delays in the profound to mild range. As can be seen in Tables 1 and 2, the evaluated and treated group demonstrated slightly higher cognitive indexes than the evaluated only group. The difference in means for the two groups was the result of chance rather than any selection process.

TABLE 1

CHILDREN REFERRED TO PROJECT BY AGE AT REFERRAL AND DEGREE OF COGNITIVE DELAY

	Age at Referral in Months	Level of Cognitive Delay: Profound	Severe	Moderate	Mild	Borderline	Normal	Total
Children evaluated & treated	0-12	0	1	2	1	0	3	7
	13-24	1	1	4	4	2	2	14
	25-36	0	0	2	1	2	2	7
	37-48	1	0	2	0	1	4	8
	49-64	0	0	0	0	2	1	3
	Total	2	2	10	6	7	12	39
Children evaluated only	0-12	0	1	0	1	0	1	3
	13-24	1	0	1	1	1	3	7
	25-36	1	2	2	2	0	0	7
	37-48	1	0	0	0	0	0	1
	49-64	1	1	2	0	0	0	4
	Total	4	4	5	4	1	4	22

TABLE 2

INITIAL COGNITIVE INDEXES OF CHILDREN REFERRED TO PROJECT

Group	N	Range of Indexes	Mean	Standard Deviation
Evaluated & treated	39	.17–1.06	.64	.25
Evaluated only	22	.06–1.00	.49	.29

In addition to cognitive delays, most children referred to the project exhibited profound to mild delays in other areas as well. In general, the degree of cognitive delay was closely related to the degree of delay in other areas. Table 3 illustrates the relationship between the level of cognitive delay and the level of delay in language, motor, and social functioning. Percentages were calculated for the number of children for whom data was available in each area.

Of children with profound to mild cognitive delays, all had language delays in the profound to mild range, all but one had social delays, and all but two had motor delays in the profound to mild range. Of the 24 children with borderline or normal cognitive rate of development, 42% had language delays in the severe to mild range, 42% (some of these were emotionally disturbed children) had social delays in the moderate or mild range, and 17% had mild motor delays.

Cluster analysis of the total population revealed two distinct groups of children: a smaller group with mild handicaps and a larger group with severe handicaps. The second group also seemed to contain a larger proportion of younger-at-entry children, perhaps because the severity and multiplicity of their handicaps made them identifiable as handicapped earlier than the more mildly handicapped cluster.

The relationships between social, motor, and language levels of delay and cognitive delay illustrated in Table 3 are fairly strong. Rank order correlations (Kendall's tau-B and Goodman-Kruskal gamma) were performed for each of the three comparisons shown in Table 3. Kendall's tau ranged from .6492 on the cognitive and motor index level comparisons to .7234 on the social and cognitive level comparisons. For the total group of children seen by the project, the mean level of delay on standardized tests in all four areas, cognition, language, social, and motor, fell in the moderate level. In Table 4 appear descriptions of the group's initial test results converged to indexes of developmental rate.

As was demonstrated in Table 3, fairly strong relationships existed between the levels of delay in language, social, and motor areas as compared to the level of delay in the cognitive area. The relationships among the indexes of developmental rate and levels of delay in the children's performances on standardized tests of cognitive, social, motor, and language function were further explored. Table 5 demonstrates the Pearson product moment (rho) correlations among the language, social, cognitive, and motor indexes for the total group of children seen by the project. The correlations are both strong and highly significant, ranging from a low of rho = .7242 ($p < .0001$) for the relationship between language and social indexes to a high of rho = .8529 ($p < .0001$) between social and cognitive indexes.

The high correlation of standardized cognitive, social, motor, and language assessments for this population may indicate that a strong single factor influences development of many different skills. This factor is perhaps maturational, probably organismic. It may mean that there are not in fact different areas of development in infancy, that language, motor, social, and cognitive skills are various signs along a single developmental path, which can be used to determine the distance a child has progressed.

TABLE 3

LANGUAGE, MOTOR, AND SOCIAL LEVELS COMPARED TO COGNITIVE LEVELS

		Cognitive Levels					
		Profound	Severe	Moderate	Mild	Borderline	Normal
Language Levels (N=51)	Profound	4 (7.8%)	3 (5.9%)	2 (3.9%)	1 (2.0%)	0	0
	Severe	1 (2.0%)	1 (2.0%)	5 (9.8%)	0	0	1 (2.0%)
	Moderate	0	1 (2.0%)	8 (15.7%)	6 (11.8%)	1 (2.0%)	2 (3.9%)
	Mild	0	0	0	1 (2.0%)	4 (7.8%)	2 (3.9%)
	Borderline	0	0	0	0	0	1 (2.0%)
	Normal	0	0	0	0	1 (2.0%)	6 (11.8%)
Motor Levels (N=60)	Profound	4 (6.7%)	1 (1.7%)	4 (6.7%)	2(3.3%)	0	0
	Severe	2 (3.3%)	2 (3.3%)	7 (11.7%)	2(3.3%)	0	0
	Moderate	0	2 (3.3%)	3 (5.0%)	3(5.0%)	0	3 (5.0%)
	Mild	0	0	0	3(5.0%)	5 (8.3%)	2 (3.3%)
	Borderline	0	0	0	0	3 (5.0%)	2 (3.3%)
	Normal	0	0	1 (1.7%)	0	1 (1.7%)	8 (13.3%)
Social Levels (N=49)	Profound	5 (10.2%)	1 (2.0%)	3 (6.1%)	1(2.0%)	0	0
	Severe	0	1 (2.0%)	1 (2.0%)	1(2.0%)	0	0
	Moderate	0	1 (2.0%)	8 (16.3%)	3(6.1%)	0	0
	Mild	0	0	0	3(6.1%)	1 (2.0%)	3 (6.1%)
	Borderline	0	0	0	1(2.0%)	3 (6.1%)	1 (2.0%)
	Normal	0	0	1 (2.0%)	0	3 (6.1%)	8 (16.3%)

TABLE 4

INITIAL DEVELOPMENTAL RATE ON STANDARDIZED ASSESSMENTS

Area	N	Range	Mean	Standard Deviation
Language	57	.02-1.11	.42	.26
Social	51	.04-1.28	.53	.30
Cognitive	62	.06-1.06	.58	.27
Motor	65	.03-1.00	.47	.29

TABLE 5

CORRELATIONS BETWEEN STANDARDIZED ASSESSMENTS

Area	N	Social	N	Motor	N	Cognitive
Language	45	.7242***	55	.7509***	51	.7938***
Cognitive	49	.8529***	60	.7601***		
Motor	49	.8034***				

***p<.0001

How stable, reliable, and predictable were the children's test results?

Changes in developmental rate might result from either unstable test results or improved performance. In normal 0 to 2-year olds, for example, there is little relationship among developmental rates measured at various ages, and on that basis one might hypothesize that the same finding would hold true for the children referred to the project. If true, comparisons of periodic test scores in 0-2 year olds would be meaningless. If, in contrast, children with subnormal developmental rates for some reason produced stable, reliable test results, then an increase in their developmental rates would indicate a degree of success for the project. Though there is some indication (Knobloch and Pasamanick, 1974) that standardized tests produce stable results for handicapped infants, such results are still considered preliminary (Brooks and Weinraub, 1976).

In order to explore this area, the indexes computed for psychological test results were compared over time across periodic administrations of the tests. Because there is a great difference in the stability of IQ scores for normal 0 to 2-year-old children as compared to IQ scores for normal 2 to 5-year-old children across testings, the group of children was divided into two groups, those children 0-23 months of age at initial psychological assessment, and those 24-60 months at initial psychological assessment. The retests occurred at slightly different intervals for all children.[1] In order to control for different retest intervals, the children were also grouped according to time intervals between tests. Four interval groupings were used: 3 to 6-month retests, 7 to 9-month retests, 11 to 15-month retests, and 16 to 21-month retests. Although the groups were small (N ranged from 4-12), the test-retest correlations were surprisingly strong and highly significant, ranging from a low of rho = .8573 ($p < .05$) to a high of rho = .9953 ($p < .01$), as can be seen in Table 6. These longitudinal data resulting from six-month reassessments were of great value and interest.

These results document the stability of standardized test results across relatively lengthy periods of time. While it has been thoroughly documented over the past 30 years that infant tests administered in the first two years show very little correlation with tests given in 6-12 month intervals, there have been indications that abnormal infants show higher predictability of test scores over time (Brooks and Weinraub, 1976). In the present study, the correlations of test-retest data from psychological tests over a 6-18 month period were in the .80's and .90's for both the 0-2 year old age group and the 2-5 year old age group, demonstrating very high predictability over time.

In addition to the high test-retest reliability, scores on tests of differing developmental areas—psychological, language, social, and motor—were strongly related. Bayley reports mean correlations of .23 to .75 between standard scores on mental and motor scales on the Bayley Scales of Infant Development (Bayley, 1969) for normal 2-30 month old infants. For the children referred to the project, the correlation between Bayley mental and motor indexes (developmental level over chronological age) fell at .76. Similar relationships existed for the Vineland social indexes and REEL language indexes—all four measures were highly and significantly correlated. What may be emerging in these results is a unitary factor involving developmental patterns in the early years of life, reflected to some degree on all four developmental tests. This may indicate that one general developmental test, i.e., the Bayley, provides a valid measure of a child's developmental patterns across all areas, thus decreasing the need for so many measures with this kind of population.

A similar finding was seen in the data gathered on the *Early Intervention Developmental Profile*. The high and significant correlations between the *Profile* scales indexes and standardized tests indexes (Rogers and D'Eugenio,

[1]Two children in the treatment group were eliminated from calculations involving change in developmental rates over time. These children, one six months old and one three years old, both suffered profound brain damage during the treatment period, and their scores thus could not illustrate typical developmental patterns of handicapped young children.

TABLE 6

TEST-RETEST COMPARISONS

Age at First Test Administration	Intervals between Test and Retest							
	N	3-6 month	N	7-9 month	N	11-15 month	N	16-21 month
0-23 months	5	.9161*	7	.9381**	6	.9601**	4	.9311
24-60 months	5	.9953**	5	.9701**	6	.9746**	2	too few
Total group	10	.9537***	12	.9520***	12	.9511***	6	.8573*

*p<.05
**p<.01
***p<.001

TABLE 7

CHANGE IN DEVELOPMENTAL RATE FOR LANGUAGE, COGNITIVE, SOCIAL, AND MOTOR AREAS

Area	Positive Change (≥ +.04)	Negative Change (≤ −.04)	No Change	Total
Language	11 (45.8%)	4 (16.7%)	9 (37.5%)	24
Cognitive	6 (25%)	8 (33.4%)	10 (41.6%)	24
Social	4 (18.2%)	6 (27.3%)	12 (54.5%)	22
Motor	6 (30%)	9 (45%)	5 (25%)	20

1977) for this population indicate that for the project's purposes, data from the *Profile* would have been sufficient for monitoring children's developmental levels and patterns. Additional testing via standardized tests added no new information. This finding strengthens the validity of the *Profile* as an infant assessment tool.

What was the general trend in developmental rate over time?

Two methods were used to determine change in developmental rate over time. First, changes over time were summed and averaged over the number of assessments for each child for each of the four areas separately. Thus, for each child there was an "average rate change" for cognitive, language, motor and social areas. An average rate change of less than ±.04 was considered no change, greater than or equal to +.04 a positive change, and less than or equal to −.04 a negative change. Table 7 presents the results.

The second method of determining the general pattern of change in developmental rate over time was simply to group together children who made positive changes in at least two of the four areas as positive, those who made negative changes in at least two of the four areas as negative, etc. Those who made both positive and negative changes were grouped together under "fluctuating change." (Two children in the group received three scores less than or equal to −.04 and one greater than or equal to .04. Because of the predominantly negative scores, they were also included in the negative group.) Table 8 presents the results.

TABLE 8

GENERAL PATTERN OF CHANGE IN DEVELOPMENTAL RATE

	Positive Change	Negative Change	No Change	Fluctuating Change	Total
Number and percentage of children	4 (20%)	5 (25%)	4 (20%)	7 (35%)	20[1]

[1]For five children, average rate change scores were available in only three of the four areas due to missing data.

These results show that (with the exception of two children, eliminated because they suffered profound brain damage during the treatment period) developmental rate did not increase or decrease but was quite stable over time for children treated by the project. As Lewis (1976) pointed out, this finding (a typical finding for various intervention programs for the type of population treated by this project) is often mistakenly used to judge an intervention technique as unsuccessful. Lewis argued for a subject-treatment interaction approach, in which treatments would be examined for effects on certain groups of children. In view of the developmental rate change groupings described in tables 7 and 8, one sees that 6 children averaged an increase in developmental rate of .04 or more for a six-month period (or .08 in a year) on cognitive tests; 11 children had a similar increase on language tests, 4 children on social tests, and 6 children on motor tests. Four children demonstrated an increase as great or greater than .04 on two or more tests. Thus, at least some children made significant developmental gains while enrolled in the program.

Because the above procedure did not completely control for differing intervals between testings, a second verifying procedure was used. The computation of the average of developmental rate change was also carried out on the developmental rate indexes obtained at each assessment. First, the rate index, developmental age/chronological age, obtained at each assessment was computed for each area for each child. The difference between rate indexes from one assessment to the next was found, summed over all administrations, and divided by the months elapsed. This gave the average rate of change per month for each child in each area. This number was then multiplied by six to represent the expected change in a six-month period (length of time between assessments) and the resulting number was the average developmental rate change. Table 9 provides a description of the average developmental rate change. As can be seen, there was little overall change in the group, with only the area of language demonstrating an average positive change of .04 or better.

TABLE 9

AVERAGE DEVELOPMENTAL RATE CHANGE FOR A SIX-MONTH PERIOD

Area	N	Min.	Max.	Mean	Std. Dev.
Language	73	−.165	.288	.044	.087
Social	64	−.154	.520	.020	.115
Cognitive	74	−.098	.240	.005	.069
Motor	65	−.240	.300	.013	.100

What were the correlations among changes in cognitive, social, motor, and language areas?

In general, more children increased their developmental rates in language skills than in any other. There was a strong relationship between cognitive and social increases, a moderate relationship between motor and lan-

guage increases, and slight relationships between cognitive and language increases, and between cognitive and motor increases. These relationships, though not as strong as the interrelationships among the test indexes in these four areas, again point to a single factor affecting developmental patterns across the four areas, as discussed above.

Since the correlations among scores on cognitive, language, social, and motor indexes were so high, it was expected that the average developmental rate changes would also be correlated. However, this was not the case. As seen in Table 10, only the correlations between the cognitive and social index rate change scores were strong and significant, with those between language and motor scores showing a moderate, non-significant relationship, and those between cognitive and language scores and cognitive and motor scores demonstrating a slight, non-significant relationship.

TABLE 10

CORRELATION AMONG CHANGES IN DEVELOPMENTAL RATE
(Correlation Coefficient rho)

	N	Language	N	Social	N	Motor
Cognitive	15	.4044	15	.7652*	14	.4140
Language			15	.2890	14	.5027
Social					14	.2585

*p=.001

Did developmental level predetermine performance on individualized objectives?

The final area of child data studies was the children's performance on objectives. Although it had been assumed that less retarded children would pass more objectives due to their faster rate of development, the findings did not support this hypothesis.

The percentage of P's, PF's, and F's for each child was computed and compared to the child's cognitive index on initial standardized testing. The correlation between the sum of percent P's and percent PF's with cognitive indexes was rho = .1830, ($p > .05$) indicating that there was no clear relationship between the two.

Thus success on objectives was unrelated to the child's developmental rate or developmental level. Performance on objectives was relatively independent of the child's cognitive level; that is, the more retarded children passed the same proportion of objectives as the less retarded children. No relationships were discovered between percentage of objectives passed and cognitive index or chronological age. This is quite an encouraging finding, for it indicates that even a profoundly retarded, multiply handicapped child can make visible, measurable progress in many areas in as short a time span as three months, providing much positive feedback for the parents and staff working with the child. Probably much of the credit for a child's success on objectives is due to staff members and parents who are knowledgeable enough about an individual child's developmental rate that they can choose individualized objectives which have a high probability of being passed.

How did the EIP Developmental Profile compare with standardized tests?

All children treated by the project after December 1974 were assessed on the *Early Intervention Developmental Profile* as well as on standardized developmental tests. It was necessary to convert the raw *Profile* scores into indexes of developmental rate by dividing the developmental level achieved on each scale by the child's chronological age at the time of testing. The resulting ratio for each of the six scales was used as an index of developmental rate for the area measured by that scale. The children's mean indexes on the *Profile*, as seen in Table 11, closely resembled the population's mean indexes on standardized tests, as shown in Table 4.

TABLE 11

PROFILE SCORES AS INDEXES OF DEVELOPMENTAL RATE

Profile Scale	N	Mean Index	Range	Std. Dev.
Language	17	.46	.17–1.00	.23
Social	17	.51	.09–1.07	.32
Self care	17	.57	.22–1.00	.23
Cognition	16	.53	.09–1.14	.30
Fine motor	16	.42	.09– .85	.26
Gross motor	17	.33	.04– .67	.19

This stability of children's performances on the *Profile* over time was also examined by correlating the developmental age attained by each child on each *Profile* scale across administrations. The correlations, as reported by Rogers and D'Eugenio (1977) and shown in Table 12, were extremely high and attest to the stability of this group of children's scores over time.

TABLE 12

TEST-RETEST CORRELATION COEFFICIENTS FOR PROFILE

	Three Month Interval			Six Month Interval		
Profile Scale	N	gamma	rho	N	gamma	rho
Language	15	.83***	.93**	12	.77***	.93**
Social	15	.96***	.98**	12	.93***	.97**
Self care	13	.92***	.98**	12	.87***	.95**
Cognitive	14	.95***	.97**	11	.77***	.90**
Fine motor	15	.96***	.98**	12	.91***	.97**
Gross motor	15	.92***	.97**	12	.84***	.96**

gamma = Goodman Kruskal rank order correlations
rho = Pearson product moment correlations
**p<.01
***p<.001

What were the characteristics of children whose developmental rates increased?

It would be helpful if one could generalize about the characteristics of the children who made gains, so that one might begin to specify certain groups of children. However, the children were not similar in cognitive indexes, ages, or other child variables examined. Thus, a general description of the group which improved was not possible.

However, there were some similarities among their parents. These are described below in the section on correlations between parent and child variables.

TABLE 13

MOTHERS' BEHAVIOR SCORES

Behavior Scores	First Administration (N=24)				Second Administration (N=17)			
	Min.	Max.	Mean	Std. Dev.	Min.	Max.	Mean	Std. Dev.
+Physical contact	0.	19.0	8.875	6.12	0.	14.0	5.235	4.55
+Verbal contact	0.	15.0	5.125	3.68	1.0	13.0	7.588	3.61
+Facial contact	0.	20.0	9.625	6.35	0.	19.0	12.471	5.01
+Handling	0.	16.0	4.458	4.12	0.	11.0	4.647	3.84
+Redirecting attention	0.	3.0	.500	.83	0.	1.0	.118	.33
−Physical contact	0.	0.	0.		0.	0.	0.	
−Verbal contact	0.	1.0	.042	.20	0.	2.0	.176	.53
−Facial contact	0.	1.0	.083	.28	0.	0.	0.	
−Handling	0.	3.0	.208	.66	0.	0.	0.	
−Absence of interaction	0.	17.0	5.958	4.99	0.	19.0	4.647	4.84

Findings Regarding the Parents

What was the mothers' behavior when working with their children?

The data gathered on the Behavior Recording Form including the ranges, means, and standard deviations of the two sets of scores are shown in Table 13. In general, the mothers achieved highly positive scores with very few negative scores in any category except Ab (absence of interactions). There was little change in the group average on the second set of observations, though what changes occurred were in a positive direction.

On the Behavioral Record Form observations, the mothers were in general quite positive, using absence of behavior—or withdrawal—rather than overtly negative behavior—scowling, scolding, or physical punishment.

The changes in scores were examined to find whether the scores all tended to fluctuate in the same way or whether there were any patterns of change over time. The resulting percentages of behavior change in the expected direction ranged from a low of 20% to a high of 75% with a mean of 52.06 and standard deviation of 16.96 (N = 17), a pattern slightly in the positive direction.

From these percentages, three groupings were developed: mothers who demonstrated the expected change (percents were greater than 60% or +½ S.D.), mothers who demonstrated negative changes (whose percents were less than 45%, −½ S.D.), and mothers who demonstrated little or no change (whose percents fell between 45% and 60%). These three behavior groups were compared to various aspects of the data on the children to explore possible relationships and the findings are discussed below.

A second measure of the mothers' performance on the Behavioral Recording Form was also developed for comparisons with the data on the children. It was hypothesized that the total number of positive scores would be negatively related to high Ab scores. This assumption proved correct, with rho = −.7484 ($p \leq .0001$) on the first test administration, rho = −.8486 ($p \leq .0001$) on the second test administration. The mothers were not negative; they were either positive in their interactions or they did not interact.

The mothers' mean number of positive scores was fairly stable as a group over time. However, this may be so because those who were less positive initially became more so, while the more positive mothers tended to become less so over time. Correlations between the total number of initial positive scores and behavior groups were moderately and significantly negatively correlated (Kendall's tau = −.6552, p = .003). Thus, the preliminary findings (Rogers, 1976) received further support, i.e. that the initially most positive mothers tended to be less positive over time, to be perhaps less anxious and intense with their child, while the initially least positive mothers became more positive over time. Perhaps an averaging factor is at work here, in that the groups at each extreme (most positive and least positive) became less extreme—moved more to the middle, as time progressed.

What was the relationship between a mother's behavior and her child's age?

There was a moderate, significant correlation between children's ages and behavior groups (tau = .4690, $p < .04$). Over time, there was a moderate positive relationship between a mother's behavior change and her child's age, which probably reflected the mother's increasing comfort and positive feelings for the handicapped child during the length of enrollment in the project, due perhaps to support from staff and other mothers as well as the opportunity to work out negative feelings and participate in her child's growth.

There was also a moderate, highly significant negative relationship (tau = −.5063, $p \leq .0001$) between the mother's initial positive score and the child's age at enrollment in that the younger the child, the more positive the mother's initial scores. A parallel finding was the moderate, highly significant relationship between absence of behavior and the child's age. That is, with older children, the mothers more frequently withheld all interactions for periods of time—perhaps to ignore maladaptive behaviors, perhaps to reduce the intensity of their mothering. Increased interest in other children and mothers might have also removed their attention from their own children.

What were the attitudes of the parents about having a handicapped child?

A modified version of the Parent Attitude Survey was administered at six-month intervals. As can be seen in Table 14, the means of the total scores showed little change over time. What change did occur was probably

due to incomplete forms on the first two administrations (seen in the low minimum scores).

TABLE 14

PARENT ATTITUDE SURVEY SCORES AT SIX-MONTH INTERVALS

	N	Range	Mean	S.D.
Administration 1	42	38-157	132.79	20.03
Administration 2	31	32-158	133.66	21.68
Administration 3	18	110-162	142.61	13.08
Administration 4	9	102-158	141.89	17.21

The percentages were then used to sort the parents into three groups: the group (N = 9; showing the greatest increase (≥ 50%, +½ S.D.), the group (N =5) showing the least increase (≤ 46%, −½ S.D.), and the group (N = 17) showing little difference in scores with a percentage increase between 46.82% and 50.00%.

In addition to these groupings which indicated rate of change across administrations, the initial total score was also used to explore the possible relationships between initial general attitudes and other parent and child variables. In order to see if the total score at first administration was related to patterns of attitude change over time, the initial total score was correlated with the attitude groupings. However, the rank order correlation was quite low (tau = −.1841) and nonsignificant.

In March, 1976, an item-by-item analysis was conducted of the changes in scores on each of the Parent Attitude Survey's first 25 questions (Lynch, 1976). Pretreatment and post-treatment scales were completed by 20 parents, and a one-way analysis of variance was performed on the scores for the first 25 questions. Two of the 25 questions, #14 and #11, demonstrated significant change ($p \leq .05$) in the parents' scores before and after treatment. One question reflected an increase in the parents' evaluation of the importance of parental stimulation of a handicapped child. The second reflected a decrease in the mother's willingness to accept the responsibility for her child's difficult behaviors. However, the change in answers to these two questions was unrelated to either the children's cognitive indexes or the length of treatment.

Did mothers and fathers differ significantly in their attitudes?

It was felt that there might be differences between fathers' and mothers' attitude scores or changes in those scores, since the mothers received far more treatment experiences and had much closer relationships with staff and with other mothers than the fathers did. It was found that at the time of enrollment in the project fathers and mothers had very similar total attitude scores, with moderate correlations and very high significance (tau = .6401, $p \leq .002$). However, there the parallelism ended. The change in attitude scores between mother's and father's scores was unrelated (tau = .0861, $p > .05$).

Was there a relationship between attitude and behavior?

In general, the findings on the attitude questionnaire did not parallel those on the behavior observations. Change on the mothers' attitude questionnaires was not related to their change in positive behaviors (tau = −.1325, $p \geq .05$). It seems as if these two facets of parental adjustment to having a handicapped child are relatively independent. Furthermore, there was no relationship between the parents' initial scores on the attitude questionnaire and the change in those scores over time (tau = −.1841, $p \leq .05$).

These results confirmed one of the more interesting preliminary findings, the lack of relationships between changes on the attitude scale and on the behavior observations. As has been found before in studying results of attitude questionnaires, what people report they feel is not necessarily related to how they act, and that seems to be the finding here.

Findings Regarding Correlations Between Parent and Child Variables

What parent behaviors and attitudes correlated with increases in their child's developmental rate?

Several important relationships between parent attitudes and behaviors and children's levels of progress emerged. An unexpected negative relationship occurred in several different comparisons concerning the children's improvement in rate of language development. There was a slight, negative, non-significant correlation (tau = −.4360, $p > .05$) between the child's change in language index and the mother's positive change in behaviors. There was also a moderate, negative relationship approaching significance (tau= −.4771, p = .08) between positive change in the mother's attitudes and increase in the child's index of developmental rate for language. There was little relationship between the father's positive change in attitudes and his child's increase in index of developmental rate for language (tau = .1849, $p > .05$).

This is a complex interactional finding, for which two interpretations come to mind. It may reflect a child's decreasing skills with which the parents are learning to come to terms, both attitudinally as they learn to cope more positively with the realistic handicaps the child demonstrates, and behaviorally, seen in the mother's increased positive interactions, in an effort to provide more stimulation. In this way of thinking, the mother's increased positive behaviors may reflect her more positive attitudes, although the findings indicate that the two are not related for the population of this project.

The second interpretation assumes the child is in fact gaining language skills, as the children's data indicate. In normal children, the child's development of language moves him out of the infant category, and his new demands for care and independence create new conflicts and difficulties for the parents. It may be that as these handicapped children develop language, the parents can no longer consider them infants and ignore the effects of the handicap in future years. They are now faced with re-evaluating the child and the effects of his handicaps on the parent's life, which may create conflicts and anxieties which, at least temporarily, have a negative effect on the parent's attitudes and behaviors regarding the child.

However, an added dimension was uncovered when success in performing on individualized objectives was compared to various parental variables. The positiveness or negativeness of parental attitudes had no observable effect on a child's successes. Hence, how the parents *felt*

about having a handicapped child did not seem related to how well the child succeeded on his objectives. However, how mothers (fathers were not included in the behavioral observations) acted towards their children had a strong and significant relationship (tau = .4030, $p < .002$) with the child's success on objectives. The mothers with the highest initial positive scores—those who, at the time of entrance to the program had many positive verbal, facial, and physical interactions with their children—had children who passed the most objectives, regardless of their age or functioning level. These same mother's initial behaviors were the best available predictors of child success on objectives—an extremely important finding in view of the fact that using parents as treatment-givers is the exception rather than the rule in child treatment.

Other similarities occurred among parents of children who showed developmental increases. For example, increases in the motor average index change scores were moderately and significantly related (rho = .5594, p = .03) to parent's initial total attitude scores, but negatively (though nonsignificantly) related (rho = .0931, $p > .05$) to the mother's behavior changes over time when compared via Pearson product moment correlations. These findings, unaccompanied by other similar relationships which might help make the meaning clearer, are not interpretable at this time.

No other parent *behavior* variables were found to correlate with any other changes in children's scores. For example, in the cognitive area, no relationship was found between parent behavior change groups and children's cognitive indexes (tau = −.0922, $p > .05$) or between positive parent behavior and change in their child's rate of cognitive development (tau = −.0657, $p > .05$). Nor was there a relationship between initial positive parent behaviors and their child's cognitive index (tau = −.1409, $p > .05$) or cognitive change groupings (tau = −.0577, $p > .05$). Nor did parent behavior correlate significantly with any other children's variables not mentioned above.

Likewise, no other parent *attitude* variables were found to correlate significantly with any other changes in children's scores. For example, in the cognitive area, no relationship was found between parent attitude change groups and change in their child's rate of cognitive development (tau = .1543, $p > .05$ for fathers; tau = −.1870, $p > .05$ for mothers). Although there was a slight, nonsignificant relationship between initial parent attitude scores and changes in their child's rate of cognitive development (rho = .4233, $p > .05$) using Pearson product moment correlations, and a similar correlation was found between initial parent attitude scores and changes in their child's rate of motor development (rho = .5594, p = .03), no pattern emerged as clearly as the one discussed above for the language area.

Was there a difference between the father's and the mother's attitudes as correlated with their child's development?

A child's variables appeared to correlate differentially with his mother's and father's attitude scores. There was a moderate relationship approaching significance (tau = .4685, p = .07) between fathers' attitude changes and the child's initial cognitive level in that the more retarded the child, the more negative the fathers' attitude change scores. No such relationship existed for the mothers, whose attitudes appeared unrelated to the degree of the child's handicap (tau = −.1544, $p > .05$). One wonders whether the common view of fathers as more achievement-oriented than mothers is strengthened by this finding. As was stated before, there was a moderate, negative relationship between mothers' attitude scores and the children's progress in rate of language development. Paternal attitude scores and changes in those scores appeared to be unrelated to all aspects of the child's variables except the cognitive index, as stated above. For parents' total initial attitude scores, there was a moderate and significant relationship with increased rate of child's motor development (rho = .5594, p = .03) and a slight nonsignificant relationship to increased rate of child's cognitive development (rho = .4233, $p > .05$). Other child variables—age and social progress—showed no relationship to parent attitude scores.

These are complex relationships, further complicated by the vast differences in treatment received by mothers and fathers. Controlling for treatment differences would allow comparisons between mothers' and fathers' behaviors toward children to be made, and more solid conclusions to be drawn. The current data supply interesting hypotheses about the complex effects that the mothers and children have on each other. But due to the lack of behavior measures and treatment experiences for the fathers, the relationships between child variables and father variables produced no viable interpretations.

Summary

From the great amount of data generated from the Early Intervention Project, some interesting general findings emerged. First was the general stability of the children's developmental rates over time. The extremely high, significant correlations of children's test scores over 6-month to 18-month time intervals contrasted markedly with normal infant and pre-schooler test-retest correlations.

Second, although the group as a whole showed no significant positive developmental rate changes after treatment was initiated, 25% of the treated group demonstrated significant positive gains in motor rate and cognitive rate and better than 45% demonstrated significant gains in rate of language development, indicating that a considerable number of the group demonstrated increased developmental rates during treatment in the project.

A third unexpected finding was the lack of relationship between cognitive level and rate of change. The most profoundly retarded children made as much relative progress as the non-retarded children, and the older children in treatment made gains similar to the younger children. It is encouraging that neither "lost time" (late onset of treatment) nor extreme retardation necessarily limited positive gains made during treatment, seen also in the 76% success on objectives demonstrated by the most retarded and the least retarded.

It appeared that parental behavior with the children had significant effects on the child's successful performance on individualized objectives, and on rate increases in language development as well. While parental attitudes and behaviors tended to be quite stable over time, they varied in relation to child variables in interesting and complex ways, influenced in part by the child's age, cognitive level, and changes in developmental patterns over time.

It is hoped that further information about the complex effects of a handicapped child on his family, the effects of the parents' attitudes and behaviors on the child's development, and the effects of this particular treatment approach will be gathered by others involved in a total family approach to treatment. Further studies need to control for the differential amounts of treatment received by fathers and mothers, and to document fathers' behaviors with their children, both initially and over time. Another variable needing further exploration is the long-term effect of intervention on children's development, parent-child interactions, and parental attitudes.

As Lewis (1976) has pointed out, it will be by thorough documentation of child-treatment interactional effects that we will begin to know which infant treatment approaches yield optimum results when applied to certain groups of children and their families. This report marks an initial attempt at such documentation.

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STAFF DEVELOPMENT ACTIVITIES

Diane B. D'Eugenio

The project's staff development activities provided opportunities for staff members to increase the skills needed to carry out their responsibilities. Activities for assessing and meeting staff needs were as follows:

Needs Assessment

Each staff member completed a needs assessment form which was used to analyze individual and group needs for training. A sample of staff responses to the needs assessment appears below.

Individual Needs

- Language development
- General infant development
- Piaget's theory of cognitive development
- Psychology evaluation of quadriplegic cerebral palsied children
- Counseling parents
- Working with low socioeconomic families
- Encouraging parents to work with other parents

Group Needs

- Interdisciplinary assessment of multiply handicapped children
- Training of staff to administer the *Early Intervention Developmental Profile*
- Systems consultation, including entry, readiness for change, implementation of change, and follow-up
- Coordination of agency services

Procedures for Meeting Needs

In order to meet the needs identified, released time was allowed for staff members to attend conferences, workshops, and courses. A limit to the number of days or hours for staff development was not set. Attendance at conferences, workshops, or courses depended upon whether or not the staff member's responsibilities could be adequately covered.

Inservice training included group sessions on team building, systems intervention, medical aspects of mental retardation, and administration of the *Early Intervention Developmental profile* and the Bayley Scales of Infant Development.

During the project period, October 1973 to June 1976, staff members spent over 1000 hours attending meetings and training sessions on infant programs, parent involvement, identification and screening of children, evaluation, dissemination, proposal writing, project administration, treatment techniques, and consultation. Distribution of hours spent in these activities were: conferences—550 hours, workshops—249 hours, courses—48 hours, and inservice training—220 hours. Project staff spent approximately one day per month on staff development activities.

Evaluation of Training Opportunities

The effectiveness of each training opportunity was evaluated by the staff member in a report to the project.

In reporting these training opportunities, staff members evaluated how well their expectations were met; ratings noted that 22% were "exceptional," 35% were "good," 31% were "fair," and 12% were "poor."

Through informal inservice training, staff members shared with others portions of their disciplinary skills so they could assist parents in all areas of development during home visits and be able to administer the entire *Profile*.

DISSEMINATION AND TRAINING

D. Sue Schafer

Dissemination activities began five months after the start of the project. These early sessions were held in response to numerous inquiries, primarily from public school personnel who were attempting to comply with Michigan's Mandatory Special Education Act, which required school systems to provide services for handicapped children from birth. The project's design was continuously tested, modified, and strengthened by presenting its findings to and incorporating feedback from those who would ultimately implement programs for infants and young children in Michigan schools.

Training Design

Most of the project's trainees were school personnel involved in establishing or expanding programs for young children. Therapists (occupational, physical, and speech), teachers, and psychologists were the core trainees. Administrators, nurses, social workers, community agency personnel, parents, students, and service group representatives (e.g., Association for Retarded Citizens) were also well represented. During the three-year life of the project, more than 750 individuals participated in project training sessions.

Project staff were the primary trainers. Project parents, however, participated on panels, prepared didactic material based on their experiences, and assisted when their children were used for demonstrations. In addition, Institute staff were asked to participate on several occasions, particularly those whose disciplines differed from those of the project staff (e.g., social work, nutrition, pediatrics, etc.).

Project training activities were publicized primarily through direct mail. Every intermediate school district special education director in Michigan was informed of all training sessions. Announcements of activities were also sent to appropriate professional, community, and parent newsletters. The Institute's State and Community Services Division's newsletter also announced planned events.

Dissemination and training activities were designed for both individual and team participation. Training for individuals continued throughout all three project years, but team training began only in the third project year after the model had been fully developed. Team training was encouraged for those agencies which were interested in replicating the project model, but the goal of every session was to stimulate program development based on all or part of the project model.

Sessions for Individuals

These sessions were designed to increase the participant's awareness and knowledge of the project's approach to early intervention. The major strategies used were: observation, conferences, seminars and short courses, simulation exercises, and presentations.

Group sessions could be observed by visitors through one-way glass or via remote-view. All visitors received a thorough orientation to the project and to its goals and objectives. Some individuals, particularly students, were able to try out newly-acquired techniques during the project's group sessions; others participated in the weekly home visits. In addition, many individuals viewed videotapes prepared by the project, observed disciplinary and team evaluations, and studied the project's record-keeping system. The project accommodated approximately 500 visitors over a three-year period.

Conferences

A national conference entitled "Early Intervention for Handicapped Infants and Young Children," was held in cooperation with the Institute in October 1974, and attracted 340 participants.

The project also collaborated with other "First Chance" projects in Michigan in a conference to present project models to personnel of the Michigan Public School System in September 1975.

Seminars and Short Courses

The popular "Seminar in Early Intervention" met weekly for four semesters, reached 44 University students, and used the project as its clinical base.

A week-long course, "Early Intervention for Handicapped Children," was held in June 1975 and was repeated in June 1976. It attracted 50 professionals (therapists, teachers, psychologists, etc.) who were interested in starting or expanding early intervention programs.

Demonstration of Techniques

The project prepared didactic materials and demonstrated project techniques in twelve sessions in a variety of settings entitled "Methods in Early Intervention." The major areas covered were infant assessment and programming, family (parent) involvement, and team functioning. The most successful training approach was the use of simulation exercises which encouraged group participation, stimulated deeper thinking, and provided more useful feedback for project modification.

Presentations

During the second and third years of the project, staff members made presentations at workshops and conferences on general descriptions of the model or on specific facets of project philosophy or operations. Presentations were made at regional and national meetings of the American Association on Mental Deficiency, Council on Exceptional Children, American Occupational Therapy Association, American Physical Therapy Association, and Association of University Affiliated Facilities. More than 1000 persons attended. Additional presentations were scheduled for the American Occupational Therapy

Association and the American Physical Therapy Association during 1976-77.

Sessions for Teams

Workshops

Twenty-seven teams participated in five workshops held during the project's third year, which were designed to move the participants through the awareness and knowledge stages of learning so that skill development could be emphasized. Skill training focused primarily on use of the *Early Intervention Developmental Profile* as an assessment and programming tool. In addition to skill training, these sessions were designed to foster team development which became the 'key' to making the project model work. Each participating team was required to have at least three members: one motor person (occupational or physical therapist), one speech therapist, and one person trained in cognitive development (special education teacher or psychologist).

Special Training Relationships

In addition to conducting these team workshops, project staff worked closely with specific teams interested in either long- or short-term training relationships. Specific training sessions were developed after each team had become thoroughly familiar with the project components and approach. A needs assessment was then conducted and a training program developed. Three teams elected to establish long-term training relationships; two of these teams replicated the project model (see the chapter below entitled Replication and Continuation), and the third planned to complete the replication process during the following year.

Seven other special training sessions were designed for other agencies based on their needs. Table 1 summarizes the project's training sessions over a three-year period.

Evaluation and Impact

After each training session, participants were asked to answer a series of questions concerning the activity's content and format. The purpose of these evaluations was to determine whether the participants' needs had been met and to help the project determine future training needs and strategies. By far, the need for methods of evaluating and helping the very young handicapped child under age three (36 months) consistently outweighed all others. Other oft-expressed needs included:

1. how the school can get the family involved;
2. how to organize service delivery to handicapped infants in the home;
3. how to meet the specialized needs of the very young multiply handicapped child;
4. how to develop and implement screening programs for identifying children needing intervention; and
5. how to overcome the scarcity of written materials related to the needs of young handicapped children and their families.

By the third year, the project's interdisciplinary team approach had become the hallmark of the EIP, and an effort was made to follow the progress of the twenty-seven teams who were trained by the EIP during that third year. The team approach was fostered from the start by requiring the workshop attendees to participate as a team, not as individuals. The *Early Intervention Developmental Profile* was used both as an evaluation and programming tool and as a facilitator for team functioning during the training process. The continued use of the *Profile* after training was a measure of maintenance of the team approach, a major project impact criterion, as well as a measure of adoption of this project's design in its own right.

Fifteen teams were sent a follow-up questionnaire eight weeks after training. The project ended before eight weeks had elapsed for the remaining teams. Of the fourteen responses, 100% stated that they would be using the *Profile* during the 1976-77 school year. They reported that they had used the *Profile* to evaluate over one hundred children and had developed sixty-seven individualized programs from the *Profile* data.

In addition to introducing the *Profile* during the organized team training sessions, the project began distributing it at cost in February 1976. The acceptance of the *Profile* was widespread throughout the United States. Orders from other countries had begun to come in by the end of the project. It is impossible to measure the project's impact at this level except to cite the high number of copies distributed. The high interest in the *Profile* and accompanying materials prompted the project to enlarge the scope of this publication and submit it for commercial publication.

Materials Produced

The EIP accumulated a large collection of slides which depicted all aspects of project activities. A comprehensive slide-tape description of project activities was produced during the third year. (Due to the confidential nature of slides and videotapes of project children, these materials can be used only for Institute training purposes and for training outside the Institute when accompanied by an Institute staff member.)

Videotapes were made of several aspects of project activities, parts of which were used during dissemination activities. The collection included longitudinal progress of project children, group sessions, parent panels, team evaluations, disciplinary evaluations, and others. A videotape entitled "It's Child's Play" was produced during the project's third year and depicts the parent component of the project.

A project brochure, table display, and abstract were used as publicity materials. A variety of bibliographies and toy, equipment, and book lists were compiled and were also used throughout the project as needed. Three simulation training activities were developed and tested: two on family intervention and one on developing skill in writing individualized objectives.

By far, the most popular materials were the *Early Intervention Developmental Profile* and *Developmental Screening of Handicapped Infants: A Manual*. Over 2100 copies of these books had been distributed by the end of the project and will continue to be available at cost until the final revision is published in 1977.

Conclusions

The success of the EIP's dissemination and training activities resulted directly from the fact that sharing the project's activities began early, i.e. within the first six months, and continued throughout the project's life. The feedback derived from all trainees was invaluable in defining the needs of the major target groups, particularly Michigan school districts. As the project responded to these needs, its model components became more clearly defined. A capable project staff molded the most unique feature, interdisciplinary team functioning, into a salable product by demonstrating, writing about, and teaching others the team process. Simultaneously, the project's team process led to the development of the *Profile* and *Manual* which fulfilled the trainees' greatest need, i.e., a tool for evaluating and planning programs for handicapped infants. The flexibility of the project's training approach helped strengthen its model of service delivery. Early recognition of the model's key features paved the way for publications which the staff hopes will live beyond the life of the project.

TABLE I

EARLY INTERVENTION PROJECT TRAINING SESSIONS

Date	Content of Session	Agencies Participating	Hours	Participants
3/74-6/75	Methods in Early Intervention (12 monthly sessions)	Professionals from various agencies, particularly Michigan school districts	92	265
3/75	Identification and screening of handicapped infants	Bloomfield Hills School District	8	17
8/75	Inservice on cognitive, social/emotional, and motor development	Upper Peninsula Preprimary Institute	11	50
8/75	Orientation to EIP model	Preprimary Institute, Ypsilanti	2	22
9/75	Participation in EIP home visits; discussions with disciplinary colleagues; observation of EIP group session; program implementation	Cass Intermediate School District (ISD)	16	6
10/75	Workshop: EIP family intervention model and sensitization experience to family developmental stages	Various professionals	8	42
10/75	Orientation to EIP model	Washtenaw ISD (High Point)	3	30
10/75	Orientation to EIP model	Lapeer ISD	3	22
11/75	Visit to EIP group session and discussions concerning implementation of EIP model at WISD	Washtenaw ISD	3	11
12/75-2/76	Workshop: Team evaluation and programming for handicapped infants and young children	Beekman Center-Lansing, Bloomfield Hills schools, Carrollton schools, Clinton ISD, Garden City schools, Hillsdale ISD, Kalamazoo Valley ISD, Lenawee ISD, Midland ISD, Multicap Program-Muskegon, Newaygo ISD, Ottawa ISD, Walnut Street School, and Wayne-Westland schools	48	89
12/75	Visit to EIP group session and discussions concerning implementation of EIP model at LISD	Livingston ISD	3	5
12/75	Inservice to discuss disciplinary roles, development, and parent involvement in infant program and applications to WISD program	Washtenaw ISD	3	10
1/76	Evaluation procedures for handicapped infants and young children	Washtenaw ISD, Livingston ISD	3	15
2/76	Programming procedures for handicapped infants and young children	Washtenaw ISD	3	15
2/76	Team evaluation and programming for handicapped infants	East Upper Peninsula ISD	6	8
3/76	EIP program evaluation strategies' application to LISD program	Livingston ISD	3	6
5/76	Team evaluation and programming for handicapped infants	Char-Em ISD, Alpine Center, Traverse Bay Area ISD, Mecosta-Osceola ISD, Mason ISD, Wexford-Missaukee ISD, Manistee ISD, C.O.O.R. ISD, C.O.P. ISD	16	55
5/76	Assessment based programming (seminar)	Nisonger Center, Columbus, Ohio	3	60
5/76	Assessment based programming for handicapped infants	Easter Seal Society; Pontiac Waterford Dev. Center; and United Cerebral Palsy, Detroit	8	21
5/76	Parent involvement in early intervention	State of Ohio, Div. of Special Education	3	20
		Totals	245	769

REPLICATION AND CONTINUATION

D. Sue Schafer

Replication

The Early Intervention Project (EIP) established two replication sites which developed programs based on the project model. The sites were Washtenaw Intermediate School District (WISD), located at 1819 South Wagner Road, Ann Arbor, Michigan, and Livingston Intermediate School District (LISD), located at 1425 West Grand River Avenue, Howell, Michigan. Each district provided the necessary staff and space needed to establish the program and met the following replication criteria:

1. Developmental programming based on the *Early Intervention Developmental Profile;*
2. Team evaluation and programming with a minimum of three team members whose combined expertise covered the areas of motor, language and cognitive development; and
3. Parent training using a home-based and/or center-based service delivery model.

These replication sites were a result of the project's continuous contact with them regarding the eventual referral of EIP children to them at the termination of the project. Both centers chose to establish early intervention programs based on the EIP model for children transferred from the project as well as for other handicapped infants in their respective counties who were not already receiving services. Each district carefully studied other programs that were currently available before choosing the EIP model.

The first major step in the process of establishing a replication site was to acquire administrative approval from each school district to establish a new program. Once acquired, an orientation program for selected professionals, parents, and other interested persons was held. The purpose of the orientation session was to introduce the agency staff members to the EIP model and to begin preliminary discussions regarding the model's application in each facility.

Each school district selected a coordinator whose responsibility was to assist the project's training coordinator in assessing and carrying out appropriate training activities. The goal was to establish a viable program at each agency within six months from the orientation date.

A training program for each agency was developed which emphasized skill training, team development, and program design, and was carried out by the EIP project staff. Where possible, the training sessions were held simultaneously for both replication sites, but the majority of the sessions were individualized according to each agency's needs and stage of program development (see Table 1).

These formal training sessions were supplemented with ongoing consultation between EIP staff and individual district team members, particularly regarding children shared with the EIP. Typical activities were joint home visits and collaboration on writing objectives. This combination of informal and formal contacts eventually paved the way for each district to feel competent to implement the early intervention program in its respective setting. Livingston ISD began its group sessions on March 12, 1976, and Washtenaw ISD on March 26, 1976. Each school district received continuous consultation regarding program implementation throughout the 1975-76 school year.

TABLE 1

MAJOR TRAINING EVENTS

Content of Session	Date of Session	
	WISD	LISD
Orientation to EIP	10/30/75	10/15/75
Visit to EIP group session; initial discussion of implementation concerns	12/11/75	12/11/75
Discussion of disciplinary roles, team development, and parent involvement	12/11/75	—
Demonstration of evaluation procedures for handicapped infants and young children (joint session)	1/9/76	1/9/76
Explanation of programming procedures for handicapped infants and young children (joint session)	2/6/76	2/6/76
Explanation of early intervention program evaluation strategies	—	3/19/76

The implementation process was totally the responsibility of the school district's coordinator and varied according to each district's policies, e.g., fiscal, administrative, etc. The project monitored the implementation process through continuous consultation with each school's coordinator but did not interfere with the internal affairs of either school district.

The data in Table 2 were supplied by each school district at the request of the project and cover the period from April through June 1976. They cannot be directly compared since the two districts' policies were not identical, but they do suggest the extent of impact of the EIP model in a relatively short period of time.

Parents routinely took part in evaluations and programming in both programs. Neither program had yet involved parents in dissemination or publicity activities, but each planned to do so during the next school year.

Continuation

Both districts planned to suspend their programs over the summer and resume them in the fall of 1976. Children in both programs were provided with summer objectives for the parents to carry out. Re-evaluations were scheduled for the beginning of the 1976-77 school year. Livingston ISD was developing a plan to measure child progress which was to include progress achieved on three-month objectives as well as evaluation with standardized instruments, such as the Bayley Scales of Infant Development, every six months. Washtenaw ISD had

TABLE 2

IMPACT OF PROJECT ON REPLICATION SITES

Sources of Referral to Replication Programs	Livingston	Washtenaw
EIP	5	2
Physician	5	1
Parent	8	3
Public Health Nurse	1	1
U-M (Pediatrics)	2	1
Local School Districts	7	6
Child and Family Services	3	—
Other	3	—
Total number of referrals	34	14
Age range	9 months to 6 years	6 months to 5 years
Major Handicapping Conditions		
Down's Syndrome	2	3
Other Genetic Disorders	1	0
Cerebral Palsy	5	5
Spina Bifida	5	0
Emotional Impairment	8	0
Vision Impaired	3	0
Hearing Impaired	1	0
Language Delay	6	0
Seizure Disorder	2	0
C.V.A.	0	1
Hydrocephaly	0	1
Etiology Unknown	1	2
Disciplinary Assessments		
Psychology	6	13
Social Work	6	14
Occupational Therapy	1	10
Physical Therapy	4	11
Speech	12	10
Vision and Hearing	3	0
Placements		
EIP Replication Program	26	4
Internal ISD Program	7	0
Other In-County Program	0	7
Other Out-County Program	1	0
Incomplete Placements	0	3
Services Delivered		
Children Assessed with Profile	34	9
Individual Programs Developed from Profile	17	7
Home Visits Per Child:		
Minimum	1	2
Maximum	6	2
Center Visits Per Child:		
Minimum	1	2
Maximum	14	8
Other Visits (while child was hospitalized, etc.)	2	0
Parent and Family Involvement		
No. Parents in Group Session	38	5
No. Extended Family in Group Sessions	4	0
No. Parents Involved in Home Visits	34+	5+
No. Parents Involved in Counseling	2	1
Formal Parent Group Meetings	6	0
Informal Parent Group Meetings	14	0

not developed its evaluation plan at the end of the project.

Each school district had begun to develop its publicity campaign. Both had held orientation sessions for their respective ISD personnel and parents and had contacted their local school districts about their programs. Livingston ISD had prepared a flier and slide-tape presentation which had been seen by the community at large and several special interest groups. Both districts had accommodated visitors to their programs and planned to increase this aspect during the 1976-77 school year.

Both districts expected to maintain their programs during the 1976-77 school year based on the EIP model. Both district teams were to include the following disciplines: physical therapy, occupational therapy, speech therapy, psychology, and special education. Livingston ISD's team was also to include social work. The basic design of each program was to include a weekly center visit for each child coupled with regular home visits, 1-4 per month, based on need and staff availability. Parent involvement was to remain a high priority in both programs.

Washtenaw ISD was to continue its 1976-77 program as carried out in spring 1976 and was to accept all children who were identified as severely mentally impaired, trainably mentally impaired, or multiply impaired who resided in Washtenaw County.

Livingston ISD planned to expand its 1976-77 program to include a two-day per week program specifically designed for learning disabled and emotionally impaired children. This program was to use the EIP's team/parent training approach and was to be adapted to fit the special needs of these children. Livingston ISD was to continue to accept referrals for all children who had or were expected to have a handicapping condition.

The relative success of these replication sites could not be clearly measured with less than a complete school year of experience. However, they did show that the replication process used by the EIP was a viable one and should be continued by the Institute's Outreach Project. The key elements which stand out in the EIP's replication process are:

1. Adherence to replication criteria with flexible acceptance of performance based on each site's strengths and constraints;
2. Replication site administrative support;
3. Well-planned formal training activities based on each site's specific needs;
4. Active informal contacts between trainees and trainers regarding specific implementation problems; and
5. Program evaluation strategies which allow for fast and effective modification of training activities at each site.

The two replication sites described were to provide the continuation and demonstration programs on which the Early Intervention Outreach Project will be based. Funding approval for this Outreach Project was received by ISMRRD in June 1976, for the 1976-77 fiscal year.

RECORD KEEPING

D. Sue Schafer and Martha S. Moersch

Each developing program will be well advised to construct early in its operation a record keeping system which reflects its need for accountability while providing enough data for decision-making and for communication with team members, with the agency in which the program is situated, with parents, with agencies which share responsibilities for the children, and with the funding agency. In addition to supplying necessary information for routine reports, records also provide information which is helpful and/or necessary for replication programs, validation studies, and for research purposes both during and after the life of the program.

No one record system can be transferred directly to a new setting without some modification. However, the project's system was effective in its University setting and should be adaptable to most other settings.

Children's Records

Clinical records, which were used for purposes of accountability, statistical access, and specific training usage, were kept for all project children and housed in the Institute chart files. Limited access and confidentiality of the children's records were maintained by the Institute according to appropriate legal definitions.

The project maintained a file on each child which contained information necessary for monitoring ongoing treatment programs and collecting accountability data. The records in the project file were used only by EIP staff members and selected students who were involved in child treatment and included: referral information, record(s) of initial home visit observations, disciplinary evaluation reports, long-term objectives, short-term (three-month) objectives, parent objectives, case log, information about other agencies involved, pertinent medical information for day-to-day activities, correspondence, completed *Profile* data, parent informing report(s), and final exit report.

A third file was kept in the form of a notebook which contained only non-confidential information and was used as a communication mechanism from staff to staff, staff to parent, and parent to parent. This notebook contained each child's current objectives to which staff and parents could refer as necessary during the weekly group sessions. Space was provided for an anecdotal record by parents and staff regarding observations made of the child's performance during the past week. Attendance records were also in the notebook. The notebook was used as a training vehicle for parents to help them become more observant of their child's abilities while working toward a better understanding of their child's development over time. The notebook also served as a convenient place to record the names of visitors to group sessions.

Project Records

Financial records were kept by the Institute accounting office, and monthly statements were prepared for the project director by the Institute.

Records of all workshops, inservice training sessions, and group consultations were maintained by the dissemination coordinator.

Staff members maintained records of their own clinical activities, consultations, professional presentations, and professional development activities.

The agenda of weekly staff meetings was maintained in a file for future reference; minutes were not kept but notations of decisions were recorded.

Informal reports of evening parent meetings were prepared and contained the names of parents, visitors, staff members present, speakers or other program information, and plans for future meetings. As the numbers of parents involved in the project increased, these informal reports were often distributed to those unable to attend. They were always filed with other project records and were used in planning future meetings and in accountability reports.

Since the evaluation plan for the project included data on children, parents, and staff members, the evaluation coordinator either maintained her own records on appropriate items or periodically collected the information from other record sources within the project.

The records noted above made up the formal record keeping process of the project. Since it may be difficult to determine at the beginning of a new program what will be needed by those requesting reports, various informal means of record keeping were used by the EIP which may be useful to others. For example, monthly calendar sheets were mounted on the wall. These contained space in which staff members noted planned events, equipment reservations, vacation days, and appropriate deadlines to be met. The calendars were useful in compiling reports at later dates. Individual appointment calendars were useful sources for answering some unanticipated requests for information. Maintenance of a file of original or duplicate copies of bibliographies, handouts for dissemination activities, report forms, and various program plans and reports can save both time and money.

DISCIPLINARY ROLES

EDITOR'S NOTE: *One objective of the EIP was to demonstrate the appropriateness of using occupational therapy, physical therapy, and speech and language pathology as the primary disciplines with the young, handicapped population of the project. As a result, it was often necessary to place undue emphasis on separate and specific disciplinary functions, and similarly for psychology and special education. This disciplinary emphasis was required for dissemination activities in order to explain and to demonstrate each discipline's role in consultations, workshops, inservice training sessions, and lectures.*

Another instance of emphasis on specific disciplines was in the initial development of the Profile *and* Manual. *Individuals or pairs of staff members assumed major responsibility for specific skill areas of the* Profile. *They were responsible for determining which items to include, for developing criteria for assessing the child's status on each item, and for making sure that the other staff members thoroughly understood the meaning, the value, and the method of assessing each item.*

In reality, the day-to-day project activities stressed the team concept rather than individual disciplines. By the end of the first year of the project, all staff members were not only convinced of the value of the various disciplines, they were all well grounded in many skills of the other disciplines.

Other factors which influenced the team concept were that three of the EIP staff members also had degrees in a second discipline, and all of the staff members had had previous experience in working in interdisciplinary settings.

For the benefit of persons who may not be familiar with the various disciplines, the role of each EIP disciplinary staff member is outlined in this chapter. Since the project physical therapist also had a degree in child development and since it is usual to find child development specialists in programs for young children, the role of this discipline is included.

One aspect of the role of each discipline within the project is not mentioned in any of these descriptions. Staff members attempted to acquaint other members of their profession, their discipline, with the specific responsibilities of that discipline within a project for handicapped young children. All staff members made formal presentations to their own disciplinary groups at conferences and workshops. The presentations emphasized the contributions of that specific discipline to the success of an interdisciplinary team.

ROLE OF THE OCCUPATIONAL THERAPIST

Diane B. D'Eugenio

The role of the occupational therapist with the EIP included the areas of evaluation, treatment, consultation, and team functioning.

Evaluation

In the area of evaluation, the occupational therapist conducted both specific clinical and developmental evaluations. Clinical evaluations included range of motion measurement, determination of muscle strength; evaluation of sensation, determination of muscle tone including the presence and extent of spasticity, evaluation of pathologic patterns of motion and reflexes, and evaluation of oral-motor functioning as it related to feeding. These clinical assessments allowed for monitoring of muscular changes in the child which indicated the need for changes in programming and treatment.

Developmental evaluations included fine motor, reflex, early gross motor, self-care, social-emotional, and perceptual motor development. Most of the assessments in these areas were based on reference norms and recognized sequences of development rather than on standardized tests, although such formal tests as the Southern California Sensory Integration Tests, the Gesell Developmental Schedules, and the Bayley Scales of Infant Development were used with some children. Observations of the child's behavior and the interactions of family members were also made.

Treatment

Treatment included facilitation of general developmental skills in the perceptual/fine motor, reflex and gross motor, self-care, and social areas. Specific program planning and treatment methods were implemented for development of these skills in specific motorically handicapping conditions. Treatment techniques were used to normalize the child's movements to allow for the emergence of the next level of developmental skills.

A major contribution of the occupational therapist was to determine the appropriate position which would allow each handicapped child to use his maximum ability to function. Such positioning techniques were shared with the child's parents and with other staff members.

The occupational therapist focused on programs which could be carried out within the activities of the normal daily routine of the child and family. The occupational therapist also provided suggestions and ideas to parents and other staff members on adaptations of toys and adaptations in test item presentations necessary for the child's accomplishment of developmental skills and performance on tests. Also, the occupational therapist recommended adaptations of equipment or the use of special equipment as indicated.

Consultation

The occupational therapist provided consultation on two levels: the first was that of teaching appropriate and necessary therapeutic skills to persons interacting with the child, such as parents and other staff members; the second level was that of consultant to other agencies related to the child such as the school or medical community.

Team Functioning

By her training in general early child development as well as in the more specific areas already described, the occupational therapist brought with her an appreciation for treating the whole child rather than dividing the child's treatment into disciplinary parts. With this appreciation came the feeling of the necessity for working on an interdisciplinary team with the respect for and sharing of knowledge and skills by all team members.

ROLE OF THE PHYSICAL THERAPIST

Carol M. Donovan

Evaluation

The Early Intervention Project physical therapist shared with the occupational therapist the responsibility for carrying out both initial and on-going gross and fine motor evaluations. These assessments were based on both standard clinical instruments, such as the Bayley Scales of Infant Development, the Gesell Development Schedules, and the Hoskins and Squires, and on clinical observations. The physical therapist paid particular attention to general movement patterns, presence or absence of postural reflexes, muscle tone and strength, range of joint motion, skeletal posture, gait analysis, and cardiac/respiratory status associated with both activity and resting breathing patterns.

The physical therapist also evaluated general coordination, balance, agility, and strength involved in the more advanced gross motor skills such as climbing, jumping, hopping, running, tricycle riding, and ball handling.

Responsibility for evaluation of perceptual and fine motor skills was shared by the disciplines of occupational therapy, psychology, special education, and physical therapy. The physical therapist used informal gross motor strategies in observation of the child's body awareness, orientation in space, laterality, directionality, and motor planning abilities. Simple toys and games, such as puzzles, parquetry blocks, or ring toss were used to determine eye-hand coordination and visual-shape discrimination.

Treatment

The physical therapist was responsible for incorporating specific physical therapy findings into the child's treatment program which was implemented by parents and staff members.

A major role of the physical therapist was to instruct the speech therapist, special educator, and psychologist in the principles of positioning to increase the child's function and decrease undesired tone and abnormal movements, thus allowing evaluation and/or treatment by these disciplines to produce maximum results.

The physical therapist organized games and activities to increase gross and fine motor skills of the preschool group of children, always being aware of the need to adapt to specific handicapping conditions.

Consultation and Parent Education

The physical therapist worked closely with various medical specialties and implemented specific therapeutic treatment orders. Individualized programs were taught to each child's parents and monitored in both the home visits and group sessions. Parents were taught relaxation techniques, postural drainage, ways to position the child to facilitate head and trunk control, how to elicit appropriate higher level reflexes, and ways to encourage higher level locomotor skills such as creeping and walking.

The individual child's motor program was based on the objectives that were written in both the gross and fine motor areas. In addition, some parents were given expanded home programs in the motor areas which incorporated information on positioning the child and moving him in and out of positions as well as specific exercises when needed. Because of the physical therapist's knowledge of adaptations and appliances and of the practice of both orthopedics and physical medicine, she was able to facilitate cooperative relationships between the family and the physician.

Many of the EIP children had severe medical problems which required frequent hospitalization. The physical therapist's knowledge of hospital routines allowed her to assist the family's adaptation to and understanding of necessary medical procedures.

During weekly group sessions and home visits, the physical therapist monitored the child's motor status and physical condition. She was able to detect emerging spasticity, seizure activity, respiratory problems and the need for re-evaluation of medication.

ROLE OF THE SPEECH AND LANGUAGE PATHOLOGIST

Sara L. Brown

The speech and language pathologist filled a variety of functions on the Early Intervention Project including direct therapy, consultation, programming, evaluation, and referral.

Therapy

The great majority of the multiply impaired or developmentally delayed children enrolled in EIP exhibited language delay. The speech and language pathologist planned and carried out language therapy for a number of the older children (3 to 5 years). Specific therapy included oral and language stimulation for both a dysarthric child and a language-withholding child, behavior modification for a retarded child, and Signed English vocabulary for a Down's syndrome child under two years of age with a tracheostomy. Home language programs were written out in detail for several children under three.

Consultation

It was virtually impossible for the speech and language pathologist to serve all 80 children directly. However, she did serve as a consultant to other staff members and to parents in the areas of language reception and comprehension, language development and acquisition, non-verbal and social communication, and oral-motor skills. Much of her time was spent modeling and describing for parents how to improve the language learning environment for their child.

Programming

As part of the programming team, the speech and language pathologist helped develop the total therapeutic and educational program with regard to the language level and learning style of each individual child. Because communication is the basis for many areas of development, the speech and language pathologist's input into the family environment by monitoring daily stimulation was critical.

Evaluation

The initial and final evaluations of each child were areas where the speech and language pathologist filled a unique role. The therapist evaluated the child's total communication abilities, including non-verbal as well as verbal skills. Her input helped in the differential diagnosis of the retarded, deaf, psycho-social, and aphasic disorders based on communication behaviors of each child. Children under the age of three were given the Receptive-Expressive Emergence of Language Scale every 6 months. Language development rate and level were assessed for each child by comparing separate test results. A phonological analysis of the child's spontaneous babbling was done, and suggestions were made regarding expectancies and recommendations.

Some of the less severely involved children were given subtests of the Illinois Test of Psycholinguistic Abilities and the Peabody Vocabulary Test. A language sample was taken for the children exhibiting verbal language and analysis made with regard to types of words and sentence structures used, appropriateness of language, and other paralinguistic features.

The evaluation of oral-motor skills became especially valuable because a number of children served were cerebral palsied, retarded, or brain damaged. Such children often exhibit oral-motor or laryngeal dysfunctions which may be incorrectly diagnosed. In the case of apraxic and dysarthric children, appropriate evaluation is critical to the child's proper educational placement.

Referral

Finally, the speech and language pathologist had the training and expertise to seek out resources and referral sources when appropriate. The speech pathologist was the person trained to recommend specific language, speech or communication therapy, or to carry out direct treatment services when deemed appropriate.

ROLE OF THE PSYCHOLOGIST

Sally J. Rogers

The psychologist with the Early Intervention Project had responsibilities in the areas of evaluation, treatment, consultation, and evaluation of research design and implementation.

Evaluation

The psychologist carried out a comprehensive psychological evaluation for each child prior to enrollment and every six months thereafter, until the child ceased to participate in the program. Standardized instruments were used to evaluate intellectual and adaptive behavior development. Because of the wide range of handicapping conditions demonstrated in the children referred for treatment, the ability to use a wide range of instruments was necessary. Instruments used in assessing children referred to the project included: Bayley Scales of Infant Development, Stanford-Binet Intelligence Scale, Weschler Preschool and Primary Scale of Intelligence, Merrill-Palmer Scale of Mental Tests, Leiter International Performance Scale, and Vineland Social Maturity Scale.

In addition to standardized assessments, many non-standard techniques were evolved in order to assess cognitive skills in the children whose severe multiplicity of

handicaps precluded the use of standardized techniques. Various adaptations of testing techniques were developed for these multiply handicapped children. A presentation at the American Association on Mental Deficiency conference in June 1976 described the evaluation approaches developed by the Early Intervention Project.

In light of the project's concern with the child as a part of the family unit as well as a complete entity within himself, the developmental assessment was only one part of the psychological assessment. Two other aspects were considered equally important: the child's dynamic (emotional) functioning in relation to his family and important others and the family's dynamic characteristics, particularly as they pertained to the handicapped child. Those two aspects provided a basis for staff interaction with the child within the family system, viewing the family as a complex network of interactions, all of which were affected in some way by the entrance of an intervenor into the system. Information gained during the psychological evaluation provided an initial grasp of the problems, needs, and potential approaches for families needed by the home visitor. Clinical training in early emotional development, family dynamics, and interviewing techniques provided the skills necessary for this aspect of the psychological assessment.

Treatment

The second set of psychologist responsibilities involved treatment skills and, as in evaluation, a wide ranging knowledge of both theoretical and practical approaches because of the extreme diversity of the handicapped children and their families. One major aspect of the treatment involved assisting other project staff to write educational/treatment objectives for each child, particularly in the cognitive, social, and self-care areas. Developing objectives required: (a) a thorough knowledge of each child's developmental skills; (b) an ability to project each child's developmental progress over a three-month period; (c) ability to translate evaluation data into relevant, clearcut objectives; and (d) a thorough knowledge of normal developmental sequences in the cognitive, social, and self-care areas.

Traditional psychological treatment techniques were required for several children and families; approaches as diverse as behavior modification and traditional play therapy were used successfully with other children who needed individual treatment. A knowledge of available community treatment programs was also necessary for those children who required more intensive or specific treatment than could be provided by the project. Several families received psychological intervention via individual counseling of one parent, conjoint counseling sessions, training in behavior modification techniques, and referral for ongoing counseling or therapy.

Consultation

The project psychologist provided consultative services to many diverse groups: (a) other project staff members regarding all aspects of psychological functioning of children and families; (b) agencies providing treatment for handicapped young children regarding assessment techniques and results, treatment needs, and management issues; and (c) to the parent group by acting as their advisor. Knowledge of group process and group dynamics provided important input to these consultations; the knowledge also contributed to the format of dissemination activities.

Project Evaluation

The final area of responsibility of the project psychologist concerned evaluation of the entire project, both in terms of the project's fulfillment of requirements and guidelines of the funding agency and of the project's effectiveness in meeting its major goals. An evaluation plan, or research design, was developed, implemented, and interpreted. This required a basic knowledge off research design, statistical procedures, evaluation tools and approaches, and the ability to interpret and describe research results in narrative format.

ROLE OF THE SPECIAL EDUCATOR

Eleanor W. Lynch

For the first year and a half of the EIP, the majority of the children were both chronologically and developmentally at the three- and four-year age levels; they participated in a group identified as the preschool group. During this period, the role of the special educator focused on direct involvement with individual children.

Evaluation

The special educator evaluated preschool children to determine their preacademic skills and suggested educational plans for developing school readiness. These were carried out in group and home sessions of the project. If it became evident that the project was not the most appropriate program for a specific child, the special educator explored alternative settings and discussed these with the parents. If children were placed in other programs, the special educator assisted in the transition period, especially in those settings in which there had been few previous placements for children with special needs.

Treatment and Parent Education

The special educator assumed responsibility for treatment of individual preschool children who had learning and behavior problems. This was done by modeling during group sessions and home visits, by working with parents in developing a structured management plan for the child,

and in providing consultation to preschool teachers when the child entered another program.

At the end of the second year of the project, the preschool group was discontinued because of the increased number of referrals of younger and more severely handicapped children. The special educator continued to play a major role with school systems. She provided consultation to project members on Public Act 198, available programs and services, appropriate educational contacts, educational objectives, state planning activities, and dissemination design.

The special educator provided consultation and training to individual parents and to the EIP parent groups on Public Act 198, available programs and services, books and materials, management techniques, and teaching techniques. She participated in Educational Planning and Placement Committee meetings and encouraged parents to become advocates for their children.

Consultation

The EIP received many requests from schools for consultation on various aspects of developing programs for young children, including management techniques, training techniques, community-wide screening techniques, team building activities, the use of interdisciplinary teams, needs assessment strategies, and service delivery models. The special educator was able to offer consultation in these areas.

The special educator accepted appointment to two committees having responsibilities for developing model service delivery systems for handicapped infants and young children: Preschool Advisory Committee of the Ann Arbor Public Schools and Guidelines for Preschool Education, a subcommittee of the Michigan Association of Administrators of Special Education.

ROLE OF THE CHILD DEVELOPMENT SPECIALIST

Carol M. Donovan

A person trained in child development can add a different perspective to a project for handicapped children. All of the therapists are skilled in evaluating and treating various disabilities. The child development specialist, however, has studied the child as a whole. Thus, this person is more of a generalist with a background in all areas of development: personal, social, physical, and cognitive. This viewpoint allows for a focus on the child's strengths as well as his weaknesses, and emphasizes his needs as a normal child.

Professionals who deal exclusively with handicapped children can easily lose their perspective on what is normal. A child development specialist has been trained to observe and work with normal children. This training is often done in a group setting which is another advantage, since most therapists are accustomed to working with clients on a one-to-one basis. Children behave differently in a group, and specific skills are needed to successfully manage a group and still meet individual needs.

The child development specialist with the Early Intervention Project was also trained in the use of various test instruments to assess preschool skills, such as Peabody Achievement Test, Illinois Test of Psycholinguistic Abilities, Detroit Test of Learning Aptitudes, Wechsler Preschool and Primary Scale of Intelligence, and Slosson General Intelligence Test. These tests were necessary to plan intervention strategies for more mildly handicapped preschoolers.

Training in child development differs from training in early childhood education which emphasizes ways to educate the preschool child. Child development training is broader because it focuses on the child as he develops within his family system. The family as an ecological system is a unique and complex unit; all parts of the system interact with each other to produce change and growth. The system is viewed as an entity with unique and individual elements which interface with the economic, social, educational, medical, and community systems. The interface of these community systems with one element, a handicapped child, will have ramifications for all family members. This fact should be a major consideration for any system which delivers services to that child. The intervention of a child development specialist will assist in the interface of the family and community systems.

ADMINISTRATIVE ISSUES

Martha S. Moersch

Questions often asked by correspondents and visitors to the project concerned administrative issues, from interest in funding sources and proposal writing to interest in the day-to-day conduct of the project. Since the specific needs and individual circumstances of persons asking these questions covered such a broad spectrum, each discussion or consultation on project administration followed a different format. For this reason, no attempt will be made to address the issue of project administration except for a few general comments.

There are numerous ways in which interested persons can obtain information on grant writing, such as discussions with individuals who have obtained funding following submission of proposals for specific programs; study of the various books, manuals, and journal articles on grantsmanship; participation in workshops, conferences, or courses on grantsmanship; examination of requests for proposals, announcements, and guidelines for funding possibilities from various state and federal governmental agencies; study of foundation directories to be found in most libraries; and by seeking out and becoming knowledgeable about the *Federal Register, Commerce and Business Daily*, and other publications which routinely announce the availability of funds through grants or contracts. Most universities and large agencies employ someone to assist staff members in writing grant requests.

A project such as the EIP is almost certain to emerge as a part of an already existing organizational structure which dictates many parameters of project activities. Organizational parameters can be both facilitory and inhibitory to project operations, facilitory to the extent of offering resources and inhibitory in that the number of persons and systems to whom the project must be accountable increases in direct proportion to the number and value of the resources.

The placement of the EIP within a University Affiliated Facility assured the availability of many resources, ranging from personnel, to services, to physical equipment. Assistance was readily available for proposal writing, budgeting, negotiating with funding sources, media productions, space allocations, and for consultation on a wide variety of topics. In order to assure maximum advantage for both the home organizational system and the project itself, it was necessary for the project administrator to be a buffer, mediator, and advocate. This role assured that the project contributed to the home system's ability to meet its goals and also that the project personnel were able to focus on project goals. Creative project operation requires that this buffer role be filled.

The project director of the EIP also served as the coordinator of all project activities and supervisor of all project personnel. Responsibilities were delegated to individual staff members who were encouraged to be creative in meeting their responsibilities. The successful results of the project confirm their creative contributions.

The nature of the EIP program required intimate association with families having all the responsibilities of other families plus the added responsibility of a handicapped child. This called for special emotional support for staff members. The move from a center based program into a home based program, or a combination of the two, immediately placed the home visitor in the position of a participant in both the joys and the sorrows of the families, including critical illnesses and death as well as the successful attainment of program objectives.

As schools and other community agencies develop early intervention programs, it will be both necessary and desirable that we share findings and contribute to the needed body of knowledge related to such programs.

EARLY INTERVENTION DEVELOPMENTAL PROFILE: APPLICATION IN A TRANSDISCIPLINARY PROGRAM

D. Sue Schafer

EDITOR'S NOTE: *The* Early Intervention Developmental Profile *played an important role in the project. The* Profile *is being published as a three volume set by the University of Michigan Press under the title* Developmental Programming for Infants and Young Children, *D. Sue Schafer and Martha S. Moersch, editors.*

The three volume series is a guide to help the teacher/therapist bridge the gap between assessment and program implementation for children functioning in the 0-36 month developmental age range. The series was designed to be used by multidisciplinary teams who have combined skills in motor, language, and cognitive development and who incorporate parents as part of the treatment team. Individual professionals will also find it helpful. Six areas of development are addressed: perceptual/fine motor, cognition, language, social/emotional, self care, and gross motor. The series can be adapted to normal, high risk, and handicapped populations.

Volume 1, Assessment and Application, *provides detailed instructions for the use of the* Early Intervention Developmental Profile *including administration and evaluation techniques, scoring and interpretation of results, validity and reliability findings, and complete item descriptions. This volume suggests a method for translating the profile findings into behavioral programs for handicapped infants and young children.*

Volume 2, Early Intervention Developmental Profile, *is a scoresheet and is designed so that small increments in a child's skills can be frequently noted. The last page features a chart on which a child's development can be graphically displayed.*

Volume 3, Stimulation Activities, *is a reservoir of ideas for carrying out planned program objectives. Each developmental area contains sequenced developmental behaviors that would be expected in a normal child with adaptations for specific handicapping conditions noted. This volume describes ways to handle, stimulate, and interact with the young child in play and during daily routines; it is designed to be used by parents with assistance from appropriate professionals.*

In order to describe the Profile *and the team building process necessary for* Profile *administration, the following paper, presented at the American Physical Therapy Association meeting in New Orleans, June 1976, is reprinted here.*

Origin of the *Profile*

The Early Intervention Developmental Profile was conceived in order to fill the need for an instrument that would describe the developmental status of a child in the 0 to 36-month age range in six areas of development: perceptual/fine motor, cognition, language, social/emotional, self-care, and gross motor. The *Profile* is one of the products of the Early Intervention Project for Handicapped Infants and Young Children, which created a *transdisciplinary* treatment approach to remediating the developmental problems of exceptional infants. The EIP primary treatment team (occupational therapist, physical therapist, and speech and language pathologist), assisted by a psychologist and a special educator, needed to gather more detailed information about reflexive and cognitive development than was traditionally provided by infant assessment tools. They sought one instrument which contained developmental sequences in cognitive and motor development as well as sensori-motor, language, and social growth, so that the time and repetition involved in administering four or more separate instruments to each infant could be diminished.

The evaluation instrument had to fit the project's assessment-based approach to programming which included frequent (3-month) re-evaluations. Thus it had to be a tool which could be administered either by a single trained evaluator or by an interdisciplinary team in a relatively brief period of time (an hour or less). Also, it had to supply detailed information in the six developmental areas, while monitoring development of both severely handicapped and more mildly handicapped infants.

Initial compilation of major developmental milestones for ages 0 to 60 months began in August 1974, and was first used within the project in December 1974. The initial *Profile* results easily led to the formulation of behavioral objectives and helped to strengthen assessment-based programming within the project.

The first *Profile* revision occurred in March 1975 and included expansion of the gross motor scale to include a more detailed examination of reflexive development, enlargement of the feeding scale of the self-care section to include oral-motor development, as well as minor changes on the other scales. At this point, the *Profile* had stimulated the interest of numerous other professionals engaged in education of handicapped infants and preschoolers. Increasing requests for the *Profile* prompted the project to consider wider distribution and eventual publication of the *Profile*. Thus, the final critical examination of the *Profile* began in late 1975.

The final revision carefully considered the retention of the 36- to 60-month items, which seemed to duplicate several already-existing and satisfactory preschool assessment instruments. However, rather than duplicate exist-

ing materials, the *Profile* was revised to include only the 0- to 36-month age range, since this part of the *Profile* met a real need in bringing together the various aspects of infant development. In addition, the final revision, which was completed in November 1975, expanded the social/emotional scale to include aspects of theory from attachment and ego psychology literature, and enlarged the self-care scales to describe the development of feeding, toileting, dressing and hygiene skills in greater detail. The final *Profile* revision has been in use since December 1975 and is available through the University of Michigan Press. An expanded version of the *Profile* which includes a method for translating evaluation data into individualized treatment programs and which includes suggested stimulation activities will be published by the University of Michigan Press early in 1977.

The *Profile* contains 274 items and can be administered in less than an hour by an experienced evaluator or multidisciplinary team. The *Profile* yields needed information for planning comprehensive developmental programs for children with all types of handicaps who function below the 36-month age level. It is intended to supplement, not replace, standard psychological, motor, and language evaluation data.

The *Profile* has several unique features. First, the combined results of the six scales provide a comprehensive record of the child's skills, the breadth of which is not found in other infant evaluation tools. Second, the completed *Profile* lends itself well to the formulation of individualized objectives, a necessary ingredient of programs for handicapped infants and young children. Third, the *Profile* not only compiles a variety of developmental milestones, as seen in the language and self-care scales, but also reflects current developmental theory in the motor, cognitive, and social areas. The gross motor scale and the feeding section of the self-care scale reflect a body of knowledge which constitutes the basis for the current treatment of cerebral palsy in infants and young children by emphasizing neurodevelopmental theories and reflexive development. The cognition scale provides landmarks in the development of sensori-motor intelligence described by Piaget and focuses specifically on the acquisition of the concepts of object permanence, causal relationships, spatial relationships, and imitation during the first two years of life. The social/emotional scale reflects current theory on the emotional attachment between the mother and child and the child's gradual acquisition of ego functions during the first 36 months of life.

Multidisciplinary Team Building

The *Profile* was designed to be administered by a multidisciplinary team which includes a psychologist or special educator, physical or occupational therapist, and a speech and language therapist. These disciplines can provide the disciplinary expertise which the *Profile* requires for the language, cognitive, reflexive, and oral-motor items.

The project has trained 27 multidisciplinary teams to administer the *Profile*. These training sessions helped the project develop a successful instructional procedure for team evaluations. The first step was for each team member to become thoroughly familiar with all the items in his particular disciplinary scales. The second step was for the team to evaluate a normal infant or toddler, with each team member administering his disciplinary scale item by item, explaining terminology, administration techniques, and scoring criteria to the other team members. Team evaluations of normal children should be repeated several times in order to gain experience in how normal children of different ages handle items in the *Profile*. The team should then progress to handicapped infants and young children.

The project's team training activities always included activities which helped to facilitate each team's personal interactions, since the project believed that team success (in using the *Profile* or whatever) depended on the development of viable group interaction. Many of the professionals who attended project workshops had not been organized as a team before they came; others had been recognized as a team but had never had the time to talk about what it meant to be a team. The teams that attended were required to have a motor person (occupational or physical therapist), a speech therapist, and a teacher or psychologist. These groups of individuals were truly *multidisciplinary*, i.e., each team member worked from his own disciplinary skills and his own sets of goals and procedures.

Interdisciplinary Team Building

The purpose of the project's team process activities was to help the individual team members look at, recognize, and experience the components of an *interdisciplinary* team in which the team members shared common goals and procedures, and, more importantly, to increase the level and amount of communication among team members to include eventual sharing of each other's skills and knowledge.

The project used several techniques to facilitate interdisciplinary team development. The first technique was examination of the components of a "perfect" team. Each team was asked to brainstorm their ideas about a perfect team for about 20 minutes. During a period of sharing among teams, the requirements for a perfect team emerged consistently among all the 27 teams who participated and had the same components.

The first prerequisite for a "perfect" team is willingness and availability of each person to be a team member. It quickly became apparent that if a supervisor did not give a person released time to be a member of a team, it would be impossible to fit in the necessary time that group interaction requires into an already-existing full schedule. The willingness may be there but not the availability. The reverse can be a bigger problem. A person may be available but not willing to be a team member. This situation can be very disruptive to team process, as this person may try to subvert the team effort either knowingly or subconsciously. Both willingness and availability are thus necessary ingredients to team development.

The next component of a "perfect" team is an agreement to a common group enterprise. A group must have a purpose, common objectives. The process of working out goals and procedures as a group gives the team a sense of togetherness, a reason for being, and a chance to get to

know each other on a more personal level. The EIP staff used the development of the *Profile* as their common group enterprise. The product which they developed helped them to understand and apply uniform treatment for each child; the group interaction which allowed them to agree on a final product helped to keep the child as a whole person in the eyes of all team members.

Another component of the "perfect" team is a willingness to share one's knowledge, skills, and feelings with colleagues, and more importantly, to be willing to learn from and listen to one's fellow team members.

The final component of the "perfect" team is a very difficult ingredient to achieve: a recognition and acceptance of personal styles and skills in oneself as well as in others. Insight into one's own skills and limitations is hard to acquire, and one must learn to trust his colleagues to provide him with the feedback necessary to learn about himself. At the same time, one must learn to share his insights about others when it is appropriate.

Examination of the components of a "perfect" team helped the workshop participants gain a feeling for what each should expect in the process of becoming an interdisciplinary team member. All quickly learned that team membership required a great deal of individual effort. They also realized that they still had to develop their own team's unique methods of problem-solving but left the workshop feeling that it was all right to have team problems in the first place.

In addition to examining the components of the perfect team, the workshop participants were helped to examine the facilitating as well as constraining factors in their own system that would affect their team effort. Most of the teams were from Michigan schools which were developing or expanding early intervention programs in response to Michigan's mandatory special education law, which requires schools to provide services to handicapped persons from birth. The results of this exercise became highly individualized for each team: some had good administrative support, others did not; some had community support, others did not; some had adequate facilities, others did not. In each case they became more aware of the setting in which their team had to function and were able to begin to set some team objectives for themselves to begin to influence their team's acceptance back home.

The last major technique which the project used to facilitate interdisciplinary team development was having the teams perform a group task. In this case, we had each team evaluate a normal infant using the *Profile*. This experience was used to help each team to begin to appreciate the expertise that each discipline brought to the team. Since they had to work to complete the *Profile* in one hour, they were forced to rely on each other to complete the task. These evaluation sessions were used to initiate each team into trying something other than disciplinary evaluations which not only take time, but tend to segment the child into disciplinary pieces. At the end of the project, all 27 teams were still developing their team assessment approaches which would continue to be implemented during the 1976-77 school year.

By the time the EIP team had begun demonstrating and teaching the interdisciplinary approach to assessment and programming, they had progressed to a more highly sophisticated level of team development—the *transdisciplinary* approach.

Transdisciplinary Team Building

Staff progression from an interdisciplinary team to a transdisciplinary team came about in part because of the need for each EIP team member to represent the whole team during home visits to children. They used the *Profile* to help them solve this problem. Each EIP team member learned to administer the entire *Profile* and became thoroughly familiar with the underlying theory for each item. The process of learning to administer and interpret the entire *Profile* allowed each team member to explore further the extent of his knowledge and to identify where his expertise ended and that of another began. The learning took place over a one-year period. At the end of this period, each team member tested his *Profile* assessment skills against a standard. The results of this interrater reliability test were a 96% overall mean, which is high, and indicate the EIP team's ability to substitute for one another in profile administration (and probably in other areas as well).

The ability to incorporate several disciplinary approaches into one disciplinarian's repertoire of skills is another step in the team development process, which is called the *transdisciplinary approach* to service delivery. This approach depends on a high degree of sharing and communication among team members as well as knowledge and acceptance of each other's strengths and limitations so that the service can be delivered to the child through one primary person. The major team member responsibility in this approach is to embody the knowledge and skills of the other team members, and to quickly recognize where his skills and knowledge end and when he should call in, or consult with, another team member to help solve a problem.

The EIP team's development took the transdisciplinary model a step further and progressed to what can be called a *modified transdisciplinary* approach to service delivery in which the parent becomes an integral part of the team. In this model the parent incorporates an understanding of his child's developmental needs and learns to carry out the necessary service with training, support, and guidance from the other team members. This is a highly sophisticated level of team development and can be achieved only after the evaluation/treatment team has passed through the other phases of team development: multidisciplinary, interdisciplinary, and transdisciplinary. All four stages are depicted in Figure 1. The EIP team's ability to progress through these stages over a three-year period strengthened its ability to provide effective service.

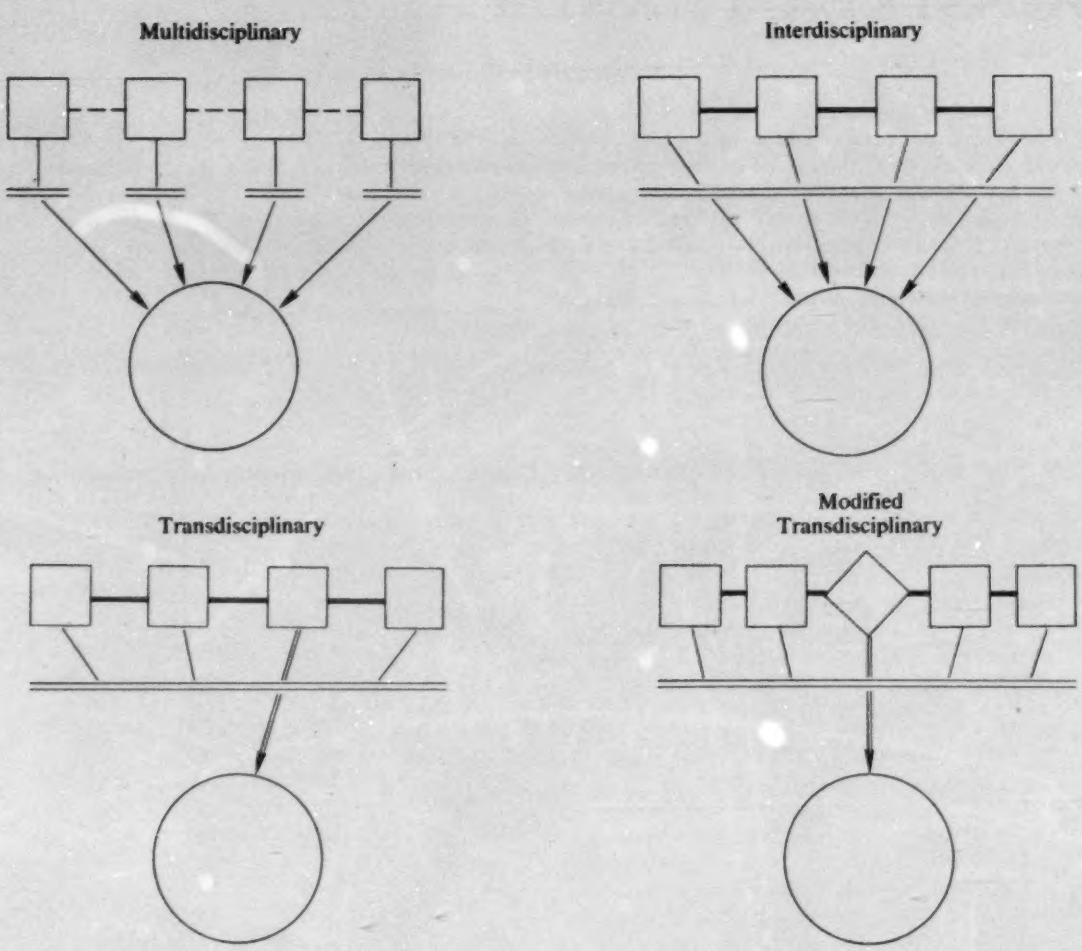
The EIP demonstrated that team development requires as much time and priority as do procedural issues in order for early intervention to be effective. It is the hope of the EIP that systems which undertake to serve young handicapped children will consider making team development a priority in the process of program development. The EIP will continue to provide training in team development along with infant assessment and programming during its Outreach phase, which begins July 1, 1976.

The EIP team members found the following methods effective in learning how to administer the entire *Profile*, the prerequisite to achieving a transdisciplinary team.

The first requirement in learning to administer and eventually interpret the *Profile* is that each team member become thoroughly familiar and comfortable with the scales

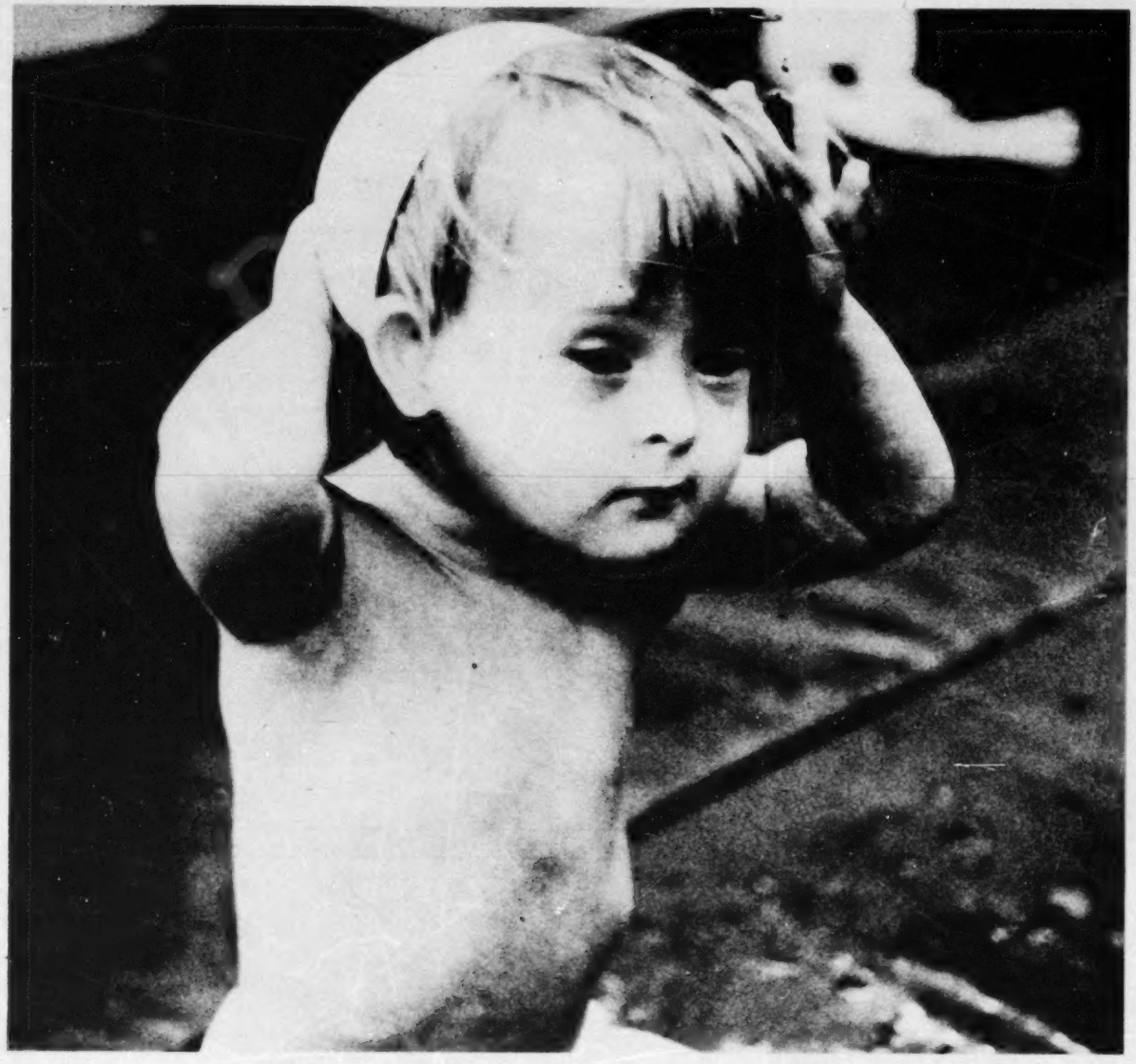
FIGURE 1

STAGES OF TEAM DEVELOPMENT



which most closely represent his own discipline. The next step is to pair with a non-disciplinary counterpart for an evaluation of a normal child. Each teaches the other his discipline-related scale, supervises administration and scoring, explains techniques, and answers questions. After proficiency and agreement have been obtained between the two persons on both normal and handicapped children, pairing should be changed and the process repeated for each new pair. The final step is for each team member to attempt a total *Profile* evaluation of one or more children in a situation where all team members could be called upon when needed.

This learning process can be supplemented and reinforced in many ways, depending on the style and attitude of the team member. Supplemental reading in other disciplines is invaluable in learning to administer the *Profile*. Ask your fellow team member which publications he recommends. Observing other disciplinary evaluations is another way to learn new approaches, but practice at applying these newly-learned skills is necessary. It was the experience of the EIP staff that team interaction leads to a broadening disciplinary perspective.



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